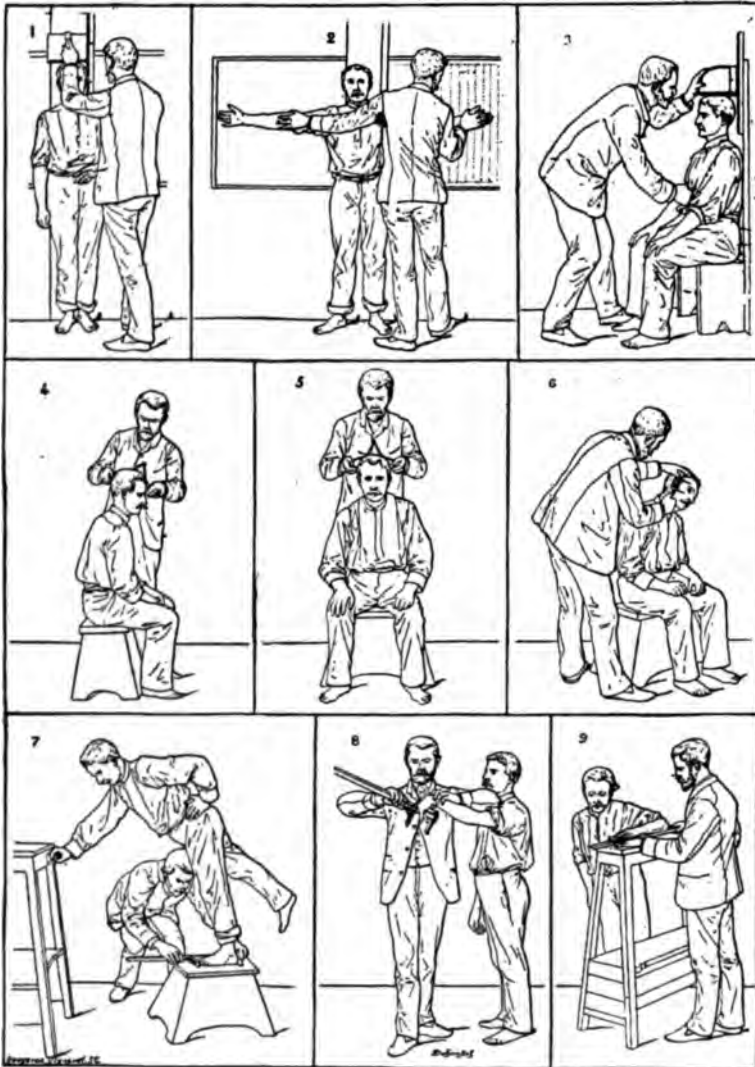


**ABSTRACT OF
THE ANTHROPOMETRICAL SIGNALMENT**

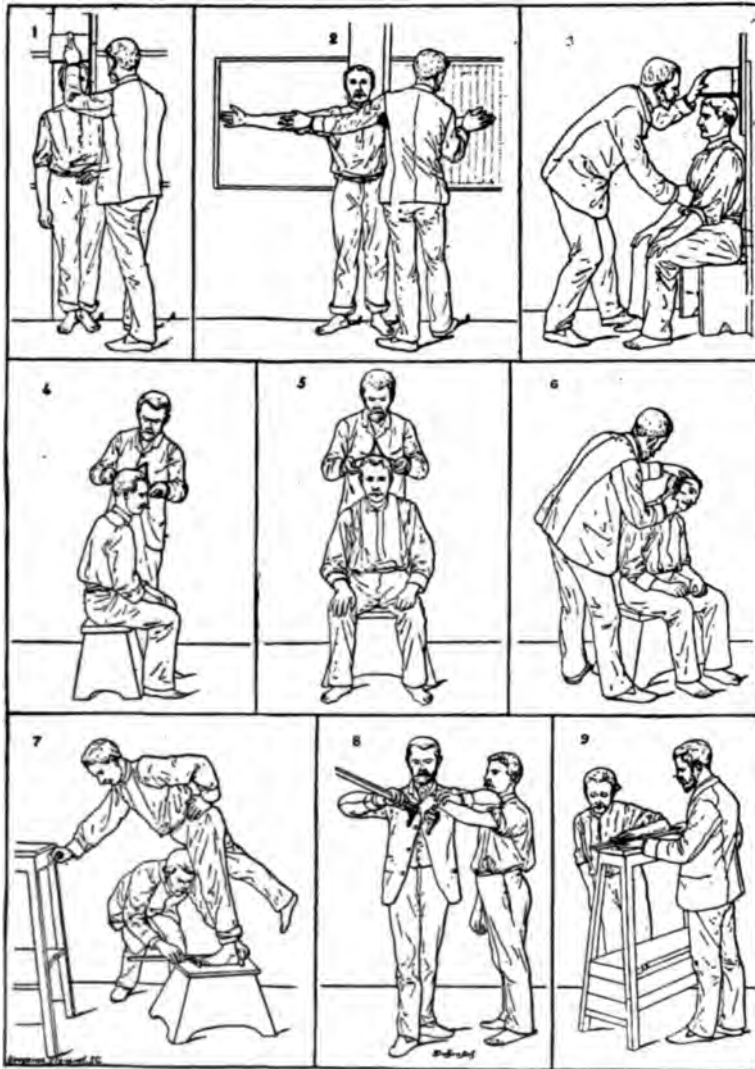


- 1. Height.
- 4. Length of head.
- 7. Left foot.

- 2. Reach.
- 5. Width of head.
- 8. Left middle finger.
(ii)

- 3. Trunk.
- 6. Right ear.
- 9. Left forearm.

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SIGNALETIC INSTRUCTIONS

INCLUDING THE THEORY AND PRACTICE OF

ANTHROPOMETRICAL IDENTIFICATION

By

ALPHONSE BERTILLON

Chief of the Judicial Identification Service of France

TRANSLATED FROM THE LATEST FRENCH EDITION

with 133 figures, plates and tables, fully illustrating the Bertillon methods of measurement, description and statement of peculiar marks, including a large chromolithographic chart of the colors of the human eye

Edited under the Supervision of

MAJOR R. W. McCLAUGHRY

late General Superintendent of Police of Chicago

1896

THE WERNER COMPANY
CHICAGO NEW YORK
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PUBLISHERS' PREFACE

The Bertillon signaletic system is divided into three parts: the *anthropometrical* signalment, which consists in measuring with the utmost precision, under prescribed conditions, some of the most characteristic dimensions of the bony structure of the human body; the *descriptive* or morphological signalment, which is the observation of the bodily shape and movements, and even the most characteristic mental and moral qualities; and the *signalment by peculiar marks*, or the *pathological* signalment, as it might almost be called, which is the observation of the peculiarities of the surface of the body, resulting from disease, accident, deformity or artificial disfigurement, such as moles, warts, scars, tattooings, etc. By means of such a threefold signalment, performed according to the method prescribed by Dr. Bertillon, the exact identity of any adult person can be established with so much definiteness that when signalized a second time he can be recognized with infallible certainty by a simple reference to the file in which the former signalment is kept. Even if this file represented the entire population of the country, the process of identifying two correctly-taken signalments by its means could be performed in most cases in a few minutes, without any assistance from a similarity of names.

According to the theory of the system, and in order for society to reap its full benefit, every human being should be partially signalized (especially by that part of the descriptive signalment relating to the ear) at about the age of ten years, and completely so at the age of maturity; and every country should have a national signaletic office where all the signalments of its inhabitants should be filed. The process of signalment would take the place of passports at every national frontier, and signalments would appear on all life insurance policies, permits and other papers whose value depends upon the establishment of personal identity. It would then be possible to find any person at once whenever desired, whether for his own good or that of society at large, in whatever place he might be and however he might alter his appearance or his name. Crime could thus be rooted out, elections purified, immigration laws effectively enforced, innumerable misunderstandings and much injustice prevented and all business relations greatly facilitated.

But while this ultimate aim and destiny of signalism may still be far from realization, it has an enormous practical utility even under existing circumstances, and is already in operation on a large scale as a police science—a means of recognizing criminals, thus protecting the innocent, insuring the punishment of the guilty and enabling a distinction to be made between new and old offenders, etc. For such purposes as these it is already used in the most widely separated parts of the world—in Europe, Asia, Africa, North America (1), South America and Australasia—and it is spreading rapidly in

(1) It was introduced into the United States in 1887 by Major R. W. McLaughry (then Warden of the Illinois State Penitentiary at Joliet, and Secretary of the United States and Canada Wardens' Association), to whose attention it was brought by the chief clerk of that institution, the late Gallus Muller. Shortly afterwards it was officially indorsed by the Wardens' Association above mentioned, and at the present time there are in the United States nearly twenty prisons and reformatories and at least seven police departments which are making use of it to some extent, although the absence hitherto of a complete exposition of the system in the English language has prevented it from being understood and applied in its entirety.

PUBLISHERS' PREFACE

proportion as its unique advantages come to be appreciated. While, naturally, the representatives of justice make first use of it, its utility is also in other departments of life becoming gradually recognized. The military authorities are beginning to use it for the recognition of deserters, and banks, insurance companies, and other business enterprises are taking under advisement the practical measures which will secure to them the protection it alone can afford.

To meet the demand created, here as elsewhere, for the fullest possible information regarding the theory and practice of signalment, the work which constitutes the only complete and official compendium of the system is now for the first time rendered into the English tongue. The translation has been carefully edited by Merwin-Marie Snell, member of the Anthropological Society of Washington, and of the American Academy of Political and Social Science, and the entire work has received the personal supervision of Major R. W. McClaughry, Superintendent of the Illinois State Reformatory and formerly Superintendent of Police of the city of Chicago, and delegate to the International Prison Congress of 1895 in Paris.

It can therefore be relied upon, both as an accurate reproduction of the original, and as being no less perfectly adapted for the purposes of practical instruction and application. In view of the future extension of the system it has been thought advisable to preserve Dr. Bertillon's international abbreviations, which are indispensable to its perfect workings on a large scale and are already employed not only by the police and prison officials of France but by those of Russia, Holland, Belgium, Brazil, the Argentine Republic and many other countries. Alternative English equivalents are given in the few cases where the abbreviations are based upon foreign or unfamiliar words or are of the nature of conventional signs.

The English nomenclature has been very carefully selected in such a manner as to preserve all the peculiarities of Bertillon's system, and at the same time make the memorizing of the abbreviations as easy as possible. To further facilitate the use of signalments received from abroad and the preparation of those for international exchange, the forms used in the original are given in parenthesis in the case of the few signaletic terms which are not so nearly alike in the two languages as to be easily recognizable. The index at the end of the book serves also as a vocabulary of technical terms, and, as it includes whenever necessary references to the French equivalent expressions, it will render superfluous the use of a dictionary of the French tongue (which for a large part of the world might be called the international language of police as well as of diplomacy), or the employment of a translator, in signaletic offices having occasion to make frequent or occasional use of foreign signalments.

Several other additions have been made in this edition, chiefly with a view to bringing the work up to date, especially a translation of Bertillon's circular relating to the bi-zygomatic measurement and to finger-prints (Appendix C), and copies of the new forms of signaletic cards used at Paris (plates 79 a and 79 b). The additions may be recognized in the analytical table of contents and lists of figures and plates immediately following this preface, by the brackets in which the corresponding titles are enclosed.

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PUBLISHERS' PREFACE

The arrangement of the book can easily be understood by reference to the analysis and lists just mentioned, and its apparent technicalities will be no obstacle to those who desire to understand and apply the system, for Dr. Bertillon has taken pains to fully explain and illustrate every point in the clearest possible manner, and often several times over.

This splendid work will be a necessity to every up-to-date lawyer and prison or police official; and it cannot fail to be welcomed eagerly by the military and customs authorities in all English-speaking lands, and by some of the leading representatives of life insurance companies and other great moneyed corporations. To social and political reformers it will have a keen interest when they realize the far-reaching possibilities that the system embodies, and it will furnish to physiognomists and phrenologists multitudes of new facts calculated to be of peculiar service. It goes without saying that anthropologists will find the volume abounding in data and suggestions of the utmost importance to their science, of which the Bertillon system is, after all, only an application and amplification. The signalments taken by the methods described already afford to this branch of pure science some of the most valuable materials ever yet placed at its disposal, and every step in the diffusion of the art of signalment will be a proportional enlargement in the field of anthropological inquiry.

A word must be said about the altogether special and indispensable value of this work to detectives, who by its use will cease to depend upon accidental clues and vague intuitions and surmises, and to be constantly led astray by general resemblances of physiognomy, but will be able to find and to recognize the objects of their search with almost mechanical accuracy. From this point of view the Bertillon system may justly be called the (detective's art raised to the level of an exact science.) The Appendix B, on the Verbal Portrait, is the key to the whole work from the detective's point of view. He will depend chiefly on the descriptive signalment, while the prison official is primarily concerned with the anthropometrical signalment, and the lawyer more especially, perhaps, with the signalment by peculiar marks. From a purely theoretical standpoint the anthropometrical portion will especially attract the anthropologist and the descriptive portion the physiognomist, while the portion relating to the peculiar marks has an interest of its own to the physician.

We feel that to all the classes mentioned, as well as to the public at large, we are rendering an incalculable service by putting before them in an English dress a work which may justly be considered one of the most important publications of recent years.

THE PUBLISHERS.

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THE METRIC SYSTEM OF LINEAR MEASURE

1 millimetre = 0.03937 inch

10 millimetres - - **make 1 centimetre**
 10 centimetres - - - make 1 decimetre
 10 decimetres (or **100 centimetres**) - **make 1 metre**

1 metre = 3 ft. 3 3/8 in., nearly

10 metres - - - make 1 decametre
 10 decametres - - - make 1 hectometre
 10 hectometres - - - make 1 kilometre

1 kilometre = 0.621 statute miles, or nearly 3/5 of a mile

The portion in bold-faced type is an essential part of the Bertillon method. See the scale on p. 95, in which the short lines represent millimetres and the long lines centimetres.

The metric system of weights and measures is now used in the arts and sciences in every civilized land, and has been officially adopted by the Government of the United States. All signaletic measurements must be expressed in its terms.

AUTHOR'S PREFACE.

It may not be strictly accurate to call a volume a new edition when the new portion greatly exceeds the old, as is the case in this publication, the text of which, including the *Album*, has been increased from 95 pages to more than 300.

It should be observed, however, that the dominating idea, which is the application of the methods of anthropological anatomy to questions of judicial identification, was already at least partially developed in the edition of 1885, and that, a point of capital importance, the anthropometric portion has undergone no changes sufficiently great to cause any discrepancies with the previous observations.

But it must not be supposed that the increase in the size of the volume involves any increase in the difficulty of applying its directions or any additional demands upon the intelligence of the operator.

The incomplete edition of 1885 was prepared in great haste, in the space of a few months, in order to comply with the request of Messrs. de Renzis and Bodio for the presentation of the new method before the International Prison Congress at Rome. Thus is explained the fact that the greater number of the instructions added to the present volume were already carried out and formed an integral part of the new signalment several years before their publication here. All the improvements introduced have, therefore, been subjected to the indispensable preliminary test of experience, and all, or nearly all, have been presented from a theoretical point of view in the scientific reviews of France and other countries without giving rise to any objections on the part of the learned world.

We may safely say, then, of this new edition that it is final in its main outlines and in most of its details, and that any future edition, if such there should be, will differ from it very little.

Here, by way of a document, is a table showing the distribution of the materials, with the approximate indication of the number of pages [in the original], part by part, first in the edition of 1885 and then in that of 1893.

	Edition of 1885	Edition of 1893
Preface - - - - -	5	10
Introduction (general exposition of the method) - - - - -	nothing	72
Practical directions of a general order -	nothing	14
First Part, Anthropometrical Observations	21	25
Second Part, Descriptive Information -	19	67
Third Part, Statement of Peculiar Marks -	15	20
Appendix on Judicial Photography and the Verbal Portrait - - - - -	5	15
Album - - - - -	30	90
Total - - - - -	35	213

The portion which has contributed most to the increase in the size of this edition is that which, under the title of *Introduction*, opens the volume immediately after this preface. In these new pages we have attempted to give a general view of the whole system of anthropometrical signalments, and particularly of the classification which forms its essential machinery.

Hence many questions will be found to be treated twice in this volume; first in the *Introduction*, from the point of view of popular presentation, and then in the *Instructions* from the practical point of view; while in the *Introduction ALONE* will be found a development of the whole speculative side of anthropometry. Incidentally we shall be led to study some of the natural laws which govern the distribution of anomalies of dimension, form and color, and we will conclude with an account of the workings of the central Anthropometrical Service at Paris, and a statistical statement of the recidivists recognized by this new procedure from the time of its introduction down to the present year.

We hope, therefore, that the reader will not be surprised at the intentional repetitions, both of words and ideas, with which he may often meet in different parts of the book. Nevertheless, the order and treatment of the materials in the *Instructions proper* being determined by the imperative requirements of practice, we have undertaken to throw a new light on the subject by a more philosophic grouping. Often, then, the same theme which in the *Introduction* may seem to hover in the clouds of abstraction, will assume an entirely different aspect when it is taken up again from the point of view of its practical application. But it must not be supposed that the preliminary and general knowledge that the reader will thus have gathered in the *Introduction* will become useless as soon as he has entered upon the technical portion; the repetition is a cerebral gymnastics indispensable for fixing the new ideas and words in the memory.

We readily admit that many of the considerations that we have enlarged upon in the *Introduction* cannot be put to any immediate use by the mere attendant. But does not the distinction of a man consist precisely in know-

ing, over and above the practice, all that bears on the theoretical side of his profession, in being acquainted with what is popularly called the *adjacent territory*?

The *prison warden*, whose life is passed face to face with human beings, and who is literally a *keeper of men*, should tend to become an *anthropologist*. This desideratum is to-day almost realized, and the experience of these latter years has shown that the men in such positions were equal to the effort and the special information that was asked of them.

We hope that those officials also of all kinds connected with the prison and police service, who, without having to apply anthropometry *with their own hands*, are called upon either to make use of its results or to supervise its performance, will find in the *Introduction* a sufficient explanation of it.

Finally, we should be happy if magistrates, who for some years have been making more and more use of the results of anthropometry, but who could not spare the necessary time for so dry a study as that of the *Technical Instructions*, would seek in these preliminary pages the general ideas indispensable to the due appreciation of signaletic information.

The PRELIMINARY CHAPTER brings together all the information of a general and at the same time technical character which could not have found a place elsewhere, such, for example, as advice on the manner of giving instructions in anthropometry and conducting a measuring room; description of the furniture and instruments; the manner of filling out a signaletic card and of responding to the headings relating to the civil status; numerous points the determination of which is important for the rigorous uniformity indispensable to a vast file, and the greater part of which were not even mentioned in the first edition.

The small increase noticed in the anthropometrical portion is more especially attributable to the modifications in the measuring of the diameters of the ear (113) and the length of the fore-arm (126); measurements whose importance has been demonstrated by the experience of recent years.

The augmentation of the *Instructions* proper is chiefly due to the fact that we have given three times as much space to the DESCRIPTIVE INFORMATION, that is to say, to the very chapter which treats of the old ordinary signalment used on passes and hunting permits, etc.

Is it not astonishing that while there have existed from time immemorial, under the name of Hippology, special works for the precise description of the shape and color of the horse, there has never existed until the present time, so far as we know, a methodical treatise on human signalment?

The cause of this should be sought in the difficulty of the subject, especially in the multiplicity of the points of view from which it must be regarded. We do not think that we are far from the truth in saying that the number of pages devoted to the exposition

of each of the three parts of our signalment (anthropometry 25 pages, description 67 pages, and peculiar marks 20 pages) is proportional to the difficulties arising in their practical application. In this respect the anthropometrical part should be considered as much easier than the descriptive part. We would add, moreover, that an immediate and perfect acquaintance with the pages relating to description is not indispensable, and that it is even recommended to postpone their study until the close of the apprenticeship. Their principal aim is to teach the close observation of the human countenance and the storing of it in the memory, whether in the case of a *living subject* or of a *photographic portrait*. They are therefore addressed to the *police officer* rather than to the prison warden.

If there is a commonplace in police circles it is the comparative uselessness of *photography* for the discovery of a fugitive criminal. "As *excellent* as it is," they say, "*for confirming* a suspected identity, it is no less *insufficient as a means of search*, and it is a matter of daily experience for the most conscientious detectives to pass by a man whose picture they have in their pocket without recognizing him." Certainly there is a little contradiction in attributing these failures to the insufficiency of photography while at the same time recognizing in it so considerable a power of identification. We affirm, and believe that we have demonstrated, that the photographic portrait would become a much more efficacious instrument of *search* and of *recognition* if detectives were more familiar with the manner of using it; of *analyzing* it, *describing* it, *learning it by heart*, and, in a word, of drawing from it all that it is possible to draw from it; for it is necessary in order to see well, or rather to *perceive* what one *sees*, to know beforehand what are the points to be looked at.

It is this idea that the celebrated anatomist Pesse has summed up in the sentence that Dr. Paul Richer has placed by way of a motto upon his recent magnificent treatise on Artistic Anatomy: "THE EYE SEES IN THINGS ONLY WHAT IT LOOKS AT IN THEM, AND IT LOOKS ONLY AT THAT OF WHICH THE IDEA IS ALREADY PRESENT IN THE MIND."

We have already had occasion to show, in a little work on Judicial Photography (1), that the best and even the only means for an agent to impregnate his visual memory with a photographic

(1) Paris, Gauthier-Villars, 1890.

portrait is to make in writing a sort of morphological description of it, exact and complete: "It has long been said that we really think only what we are able to express in words. It is the same way with the *visual memory*; we can behold in thought only what we are able to describe. The detective charged with so difficult a mission as the discovery and arrest of a criminal by means of a photograph should be able to analyze and describe from memory the face of him whom he is pursuing, to make of him, in other words, a kind of *verbal portrait*. *That is the best way of proving to his chiefs that he has entered with all his heart into the task that has been entrusted to him.*"

These instructions have received, since their publication in the former edition, the high and complete approval of Messrs. Lozé, Prefect of Police; Vigué and Cavard, Chiefs of his Cabinet; Goron, Chief of the Service of Public Safety in Paris; Taylor, ex-Chief of the same Service; Dr. Guillaume, General Secretary of the International Prison Association; Le Royer, Under-Secretary of the Department of Justice and Police in Geneva (1); McClaughry, General Superintendent of Police in Chicago, etc.

There will be found in the *Album* models of descriptive formulæ and numerous photographs of physiognomical types presented in tabular form in order to serve as a guide in the production of the *verbal portrait*. Their popularization in the work of the active police force is now only a question of time; the theoretic position is already gained. But it is well understood that so complete a table of descriptive headings need not be prepared in the case of every subject examined; this outline, being intended for the analysis of a photographic portrait in order to facilitate the discovery and recognition of a fugitive criminal, should be used only when circumstances require. Investigators of this kind have at their disposal all the time that is necessary, and the importance of the task which is entrusted to them is such that the additional labor that this imposes upon them is unworthy of consideration.

(1) "It is necessary to give to the detectives such instruction as will enable them to utilize to good effect a card provided with a photograph, to know, for example, how to recognise an ear, for this part of the body is the most important from this point of view and furnishes numerous and valuable indications which permit of no confusion." M. Le Royer, L. J., in *Revue pénale suisse*, 4th year."

So all our efforts in drawing up the *Instructions* on the DESCRIPTIVE INFORMATION have been directed towards putting within reach of the agent of the public power a method at once rigorously scientific and as simple as the subject permits.

It was worth the trouble, for it is evident that the pure *anthropometric signalment* (upon which we could not be suspected of being too severe) cannot enter into competition with the *descriptive* for the purposes of the exterior police, and especially for the *identification* of a fugitive malefactor.

Now, when we look at the matter from a high standpoint, the whole work of the police force hinges upon questions of *identification*. A crime has just been committed by some unknown person: the task of the police will consist, first, in discovering the individuality of the culprit; secondly, in searching for him in order that he may be arrested, that is to say, in *individualizing* him in the midst of the multitude of human beings. From the beginning to the end of the judicial inquiry the only questions to be elucidated are those of identity, of description, of *signalment*; taking as a basis the vague and often deceptive evidence of witnesses, it is true, but even upon this the new method has the merit of throwing some light.

Is not this a first step towards a scientific police system, in which all the technical information connected with the *man hunt* will be brought together in a scientific way? Hitherto this matter has been left entirely *to instinct*, that is, *to routine*. The professional instruction of the police has been limited to some odds and ends of legislation. Now legal learning always has been and always will be primarily the attribute of magistrates, who know the law better than anybody else. But what a difference when we go on to the application! While the justice should execute only what the law commands him to do, all means are useful to the police that can aid in the discovery of the truth: in the matter of legislation they hardly need to know anything more than the limits beyond which law and custom forbid them to go.

Nothing, then, prevents the police system from undergoing in its turn an evolution along the line of the application of scientific principles. Anthropology is in its definition nothing else than the natural history of man. Have not hunters in all ages been incited by information connected with natural history, and, inversely, do not naturalists have something of the hunter's instinct?

No doubt the police of the future will come to apply the rules of anthropology to their particular kind of hunting, just as the firemen of our locomotives put into practice the laws of mechanics and thermodynamics.

We may further remark among the technical modifications the innovation in regard to the classifying numerals of the color of the eye, which, by rendering the notation of the shade more exact and more simple, has suppressed the heading *limil*, the use of which was very generally misunderstood. Thus corrected and illustrated by a chromotypographic plate, the chapter on the eye will need to be studied anew by the old operators.

The changes introduced into the third part, the statement of peculiarities, consist in the replacing of certain terms by others susceptible of more rapid abbreviations. Thanks to this transformation the symbols now recommended are common in their initials to English and French, or to French and Latin. Several synoptical tables, arranged especially with a view either to the writing or the reading of descriptions of scars, will offer a ready guide to persons unfamiliar with the use of these signs.

In the appendix on judicial photography will be found a description of a new posing-chair, which, while allowing an easy and rapid operation, assures a rigorous uniformity of reduction between the full-face and profile photographs.

From the mechanical point of view, this edition is distinguished from the preceding: 1st, by numerous figures from the pen of an artist who is at the same time a distinguished anthropologist, Colonel Dubouset (1); 2nd, by 30 collographic [in the American edition half-tone] plates giving more than two hundred photographic portraits taken conformably to our rules, and a hundred enlargements of the ear; 3rd, by a chromotypographic plate relating to the color of the eyes, reproducing exactly a series of models painted in oil, after nature, under my direction.

In order to facilitate the reading and interpretation of the technical directions, the plates and designs have been brought together in a separate volume [bound together with this]. The figures have been intentionally multiplied, especially in the anthropometric portion, in such a way as to represent separately every important change of position. Furthermore, whenever it has been judged necessary the positions have been reproduced from two different points of view:

1st, a general view, usually taken on a horizontal projection, indicating the respective positions of the subject and the operator;

(1) The union of these qualities in so eminent a personality as that of Col. Dubouset has been for us a piece of good fortune that we have not hesitated to use, and sometimes even to abuse, without ever exhausting the kindness of our collaborator. His participation in the work has not been limited to the drawings alone, for his advice has also been very useful in the preparation of the *Instructions* themselves.

We would mention also among those by whose advice we have profited Dr. Manouvrier, professor in the Anthropological School of Paris.

2nd, a partial view, on a much larger scale, usually taken from above at an angle of from 45 to 90 degrees, in order to show the relations between the instrument and the organ to be measured, as well as the fingering peculiar to each operation.

The plate representing the fingering is always placed opposite the general view and turned in the same direction. The corresponding position of the two images is a rule which has been carried out in every instance; so it has sometimes brought about an odd turning of the pictures.

We have carried our solicitude for exactness so far as to indicate those of our illustrations of the fingering in which the views, representing the measurer from the front, would appear to the latter as turned about, that is to say, where the right side falls on the left of the drawing, and inversely. It is easy to assure oneself that this reversal, which is likely to embarrass a novice, can be avoided only when the illustration is taken in such a way as to follow the glance of the operator, that is to say from the back or three-quarters as regards the latter.

Whenever it has not been possible to proceed in this way a special heading, printed upside down above the figure, reminds the inexperienced measurer that he has to turn the plate before reproducing its positions (figs. 1 and 2).

REDUCTION, ON A SCALE OF ONE-SIXTH, OF PLATES 24 AND 25 OF THE ALBUM, RELATING TO THE THIRD STAGE IN THE MEASURING OF THE LEFT MIDDLE FINGER.



A. Point of view of an observer who, in the presence of a measurer operating under his eyes, desires to verify the correctness of the positions taken.

Fig. 1.—GENERAL VIEW, taken at an angle of 45 degrees.

Fig. 2.—SPECIAL VIEW, taken at an angle of 90 degrees.

Perhaps some may think that here as elsewhere we have entered into too minute details regarding the application of the rules. To this I would answer that there is good reason for even our most detailed directions, either in view of a uniformity of results, or of a greater facility of acquisition or performance.

The following didactic question is often suggested in such cases: *Does it not take longer for the apprentice to read and apply such minute instructions, than to wait until he has discovered in practice the necessity for them?* Experience has shown us that whatever was left to individual initiative ran a risk of either being misapplied or omitted altogether; so we have never hesitated to insert regulations occasionally even of a somewhat trifling character, whenever it has seemed to us they would result in a greater rapidity of instruction.

Contrary to the opinion that we have very often heard expressed, we consider that the more a book is addressed to a wide public without special preliminary information, the more it is necessary to enter into infinite details. *A difficulty cannot be overcome by eliminating it from the text;* it continues to arise to the perplexity of the learner; and the more inexperienced he is, the less intelligent he is, to speak plainly, the more he will be embarrassed if he does not receive assistance. Where we have found many pages necessary a word would have sufficed if we had been writing only for professional anatomists. These *Instructions* might have been so far abridged as to reduce them to a few pages of generalities. But the more they were abridged the smaller would be found to be the number of persons capable of understanding and applying them.

So all the points which during the last five years have given rise to misunderstandings, either in France or elsewhere, even though this has occurred only in exceptional cases, have been the object of special supplementary explanations.

This wealth of details is likewise of a nature to simplify very much the task of corrector of signalments which has been incumbent upon us. Thanks to the numbering of each paragraph we shall be dispensed from repeating continually the same explanations in the manuscript correspondence that we carry on with various French and foreign police officials. A mere reference of a faulty measurer to such and such a paragraph of such a page will be sufficient to enable him to correct himself.

In conclusion, although the modifications introduced do not involve, as we have already stated, any essential change, the practitioners who have studied the first edition ought to take it upon themselves to read over this new publication in its entirety, indicating by a pencil mark the passages which require any change in their method of operating, so as to be able to find them readily again and to study them over at leisure. For, in addition to the important corrections pointed out above, there are few paragraphs, and few sentences even, which have not been to some extent modified.

The absoluteness of our affirmations in questions of identity, and especially in the most difficult cases of the identification of two photographs, still surprises, and sometimes disturbs for a moment, those functionaries of the police and judiciary who have not learned by long experience what they call at the Government House our *infallibility*.

We owed it even to ourselves to demonstrate that the habitual preremptoriness of our responses did not result from any hasty judgment, but was the rational outcome of the combination of various processes which, when correctly applied, do not leave the least room for indecision.

May the present volume answer this purpose, and thus contribute to insure the survival and general diffusion of the method.

The execution of the engravings, and particularly of the chromotypographic plate of the eyes and the thirty photocollographic plates devoted to the descriptive characters, has occasioned an expense which we could not have borne without the assistance of the Minister of the Interior and of his eminent director, Mr. Lagarde. Since the year 1889, on the proposition of Mr. Bompard and the report of Mr. Guichard, the Counsel-General for the Department of the Seine has on his part generously granted us a subsidy to assist in making known this new method, which, invented by a Parisian (in March, 1879), and tried for the first time ten years ago in Paris, is now in use throughout the entire world.

ALPHONSE BERTILLON.

INTRODUCTION

SUMMARY: *I. Theoretical study of signalment.—II. Account of the three kinds of signalment:* 1. Anthropometrical signalment; 2. Descriptive signalment; 3. Signalment by peculiar marks.—*III. Final considerations and conclusions:* 1. The comparative place of the three kinds; 2. Organization of the Identification Service at the Parisian Prefecture of Police; 3. Workings of the service of anthropometrical signalment in other parts of France; 4. Statistics of the results obtained at Paris and in other parts of France; 5. Advice to officials who wish to consult the anthropometrical records; 6. The internationalization and enlargement of the system.

I

THEORETICAL STUDY OF SIGNALMENT

Signalment is the description of one whom it is desired to identify (Littré). In prison practice the signaletic notice accompanies every reception and every delivery of a human individuality; it is the *master-roll* which preserves the evidence of the real and effective presence of the person had in view by the administrative or judicial act. Whether in the case of an entrance to prison or a discharge, a liberation or a transfer, or merely the notification of a judicial or executive decision, the aim is always the same: to preserve a sufficient record of the personality to be able to *identify* the present description with one which may be presented at some future time. From this point of view signalment is the instrument, by excellence, of the *proof of recidivation*, which necessarily implies the *proof of identity*. So there could be no judicial records without the aid of signalment.

Inversely, signalment sometimes intervenes to prove non-identity, at the request of honorable persons (victims, it may be, of a forger, or of an unfortunate similarity of names,) who demand the effacement from their record of convictions unduly entered.

The new penal laws [of France] relating to banishment, conditional liberation, and suspension of sentence (Bérenger laws) have singularly increased the number of concealments of identity by making such attempts more important to the criminal.

It has, therefore, come to be expected of a system of signalment not only that it verify a declared identity, but that, on occasion, it shall cause the true identity to be discovered.

Now, the making of original signalments, as well as their interpretation or correction, falls, in the nature of the case, upon the prison official. *The prison must recognize its own.* The police, which is a local authority, can lend to it in this emergency only an assistance limited to its own field of action.

The laws intended to prevent the repetition of crime practically make no distinction between a *local* recidivation and recidivation incurred *in different parts of the territory of the Republic.* The obligation then evidently rests upon the Administration of Prisons of identifying and describing, without distinction of origin, the recidivists of all countries who may seek to conceal themselves under false names in the midst of the prison population.

This important result has only been attained by the centralization, in a special service, of copies of all the signalments taken in the different prisons of France. This is the side of the problem which more especially necessitates the anthropometrical part of the signalment notice.

Thirty years ago it was believed that photography was going to furnish the solution of the question. But the collection of judicial portraits thus brought together soon became so numerous that it became physically impossible to find, *to discover*, among them the likeness of an individual who concealed his name.

During the last ten years the Parisian police have collected over 100,000 photographs. Do you suppose it possible to compare successively each of these 100,000 photographs with each of the 100 individuals who are arrested daily in Paris? If it were to be attempted in the case of some specially noteworthy malefactor, the search would take more than a week of application; not to speak of the errors and omissions which a work so delicate and fatiguing to the eye would not fail to occasion.

There was need of a method of elimination analogous to that employed in the sciences of botany and zoology; that is to say,

taking as its basis the characteristic elements of the individuality, and not the name, which is liable to falsification.

We may remark, in passing, that the absence of a natural classification is an objection which applies equally to all systems of judicial identification that have been proposed to supplant photography. We will mention, among others: (1) the impression of the tip of the thumb, a method which, it appears, is practiced by the Chinese; (2) the plaster cast of the jaw, which certain dentists would desire to impose upon our criminals; (3) the minute drawing of the areola and denticulation of the human iris, somewhat after the method proposed by me some ten years ago; (4) the impression, mold, or photograph of the ear, the hollows and projections of which present so great an individual variety that it is almost impossible to find two human ears exactly alike, and which are so persistent in the individual that the shape seems to remain unchanged from infancy to old age; (5) the anatomical description of peculiar marks, beauty-spots, scars, etc.

Some one said long ago that it is impossible to find two leaves exactly alike; Nature never repeats herself. Select no matter what part of the human body, examine and compare it carefully in different subjects, and the more minute your examination is the more numerous the dissimilarities will appear: exterior variations, interior variations in the bony structure, the muscles, the tracing of the veins; physiological variations in the gait, the expressions of the face, the action and secretion of the organs, etc.

The dog that is seeking his master in a crowd goes over the place in every direction, his nose to the ground. Homer tells us that after an absence of twenty years Ulysses, disguised as a mendicant, was recognized only by his dog, "the faithful and keen-scented Argos." Here there is evidently an element of individuality, and consequently of recognition, which entirely escapes the senses of man. But a few words pronounced in a natural voice, and "Edisonized," would leave a very convincing trace of identity.

Thus, the solution of the problem of judicial identification consists less in the search for new characteristic elements of individuality than in the discovery of a method of classification. Certainly, I do not deny, to speak only of the Chinese method, that the flagreed arabesques found on the epidermis of the anterior face of the thumb may be at the same time permanent in the same sub-

ject and extraordinarily variable from one subject to another; and that every individual may thus possess a species of seal, original and entirely distinctive. Unfortunately, it is quite as undeniable, in spite of the ingenious investigations made by Mr. Francis Galton in England, that these designs taken by themselves do not present elements of variability sufficiently well-defined to serve as a basis of classification in a file of several hundred thousand cases (1).

The anthropometrical signalment, besides offering as much and even more variability than the several methods that we have just enumerated, is admirably adapted to classification; this is its aim, its principal purpose, and the reason of its superiority.

II

ACCOUNT OF THE THREE KINDS OF SIGNALMENT

I. ANTHROPOMETRICAL SIGNALMENT

The use of anthropometry as a method of identification rests upon the three following data, which the experience of these last ten years has shown to be indisputable, to wit:

1. **THE ALMOST ABSOLUTE IMMUTABILITY OF THE HUMAN FRAME AFTER THE TWENTIETH YEAR OF THE AGE.** The height only, or, to be more exact, the thigh-bone, often continues to grow for two or three years longer, but so little that it is easy to make allowance for it. Experience shows that this small increase is more than compensated for by the curving of the vertebral column (indicated on the signaletic card by the term *curv.*), which, commencing about the twentieth year, continues to accentuate itself by degrees until old age.

2. **THE EXTREME DIVERSITY OF DIMENSION WHICH THE HUMAN SKELETON PRESENTS WHEN COMPARED IN DIFFERENT SUBJECTS,** to such an extent that it would be difficult, if not impossible, to find two individuals whose bony structure is, we will not say exactly identical, but even sufficiently alike to make any confusion between them possible.

(1) Since the publication of the French edition instructions have been given to the French signaletic agents (by circular of January, 1894.) for the taking of digital impressions, and a place has been provided for these on the card. (See APPENDIX C, p. 260.)

3. THE FACILITY AND COMPARATIVE PRECISION WITH WHICH CERTAIN DIMENSIONS OF THE SKELETON MAY BE MEASURED in the living subject by means of calipers of very simple construction.

The following are, from among the innumerable measurements that it is possible to take of the human body, those to which, after minute criticism, we have finally given a place on the formula for anthropometrical signalment.

Measurements of the body at large:	{	Height (height of a man standing). Reach (length of the outstretched arms, from finger-tip to finger-tip). Trunk (height of a man sitting).
Measurements of the head:	{	Length of the head. Width of the head. Length of the right ear. Width of the right ear (1).
Measurements of the limbs:	{	Length of the left foot. Length of the left middle finger. Length of the left little finger. Length of the left forearm.

These observations are of value only on the *indispensable* condition that they are taken in a rigorously uniform and exact way. The signaletic value of the length of a bone is, other things being equal, directly proportional to the accuracy of its measurement. This is a very important point, upon which we must particularly insist.

Let us suppose, for example, that in some way or other we were able, always and everywhere, to measure the stature in such a way as to commit an error one-half less than that to which this indication is ordinarily liable; it is evident that the figure thus obtained would permit the distinguishing of *twice* as many individuals; in other words, it would have a *double signaletic value*.

But what final results would one not obtain, supposing the same improvement in measuring to be afterwards applied successively to the ten other observations of the anthropometrical signalment! The reach taken with double precision would differentiate in the same way twice as many persons, which, taking account of the result already obtained from the height, would *quadruple* the

(1) For this has been substituted since the publication of the French edition the measurement of the bi-sygmatic diameter, that is, the width of the face across the cheek-bones, which is entirely distinct from the width of the head above the ears (see APPENDIX C).

number of subjects recognizable by these two characteristics taken together ($2 \times 2=4$). A similar improvement in the measurement of the height of the trunk would also double on its part the preceding number, which would thus become *eight times* as large as the original one. The transformation of the eight other measurements, each involving a successive reduplication, would progressively raise this co-efficient to the number of 2048 ($8 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2 \times 2=2048$)!

Thus the simple fact of being able to take each of the eleven measures of the anthropometrical signalment with double precision would render this instrument *more than two thousand times better*; in other words, if the first signalment, such as we have supposed it, would allow of a thousand persons being distinguished one from the other (we mention this number at random) the new one, after this ideal improvement, would distinguish among two million ($1000 \times 2000=2,000,000$).

Inversely, the least negligence, or even the least difference in the method of operating which diminished the accuracy of the observation, might, by continuing itself through our whole series of measurements, result in almost nullifying the signaletic value of an anthropometrical description.

These considerations demonstrate beyond any question the absolute necessity of taking the measurements with all possible accuracy, by means of special instruments and in exact conformity with the minute instructions which are the object of the technical part of this volume.

The short summary that we shall give here, while manifestly insufficient for guidance in practice, will serve at least to impress upon the reader the signification of each of these observations (see frontispiece).

The *total height* is projected by means of a wooden square of special form upon a graduated metre placed vertically against the wall. The subject, barefooted, is placed with his back to the wall, the vertebral column about fifteen centimetres to the left of the scale. The more rapidly the operation is performed the more accurate it will be.

The *reach*, or length of the arms extended in the shape of a cross, is taken immediately afterwards, almost without moving the subject, by means of a mural graduation whose centimetrical vertical lines are adapted to all heights.

The measurement of the *height of the trunk* (the height of a man when seated) is then effected by the aid of instruments analogous to those employed for the full height.

The two cranial diameters (*length* and *width* of the skull) are both *maximum* dimensions. They should be taken by means of a special compass furnished with a graduated arc of a circle, of the type commonly called *caliper compasses*.

The length of the head is measured from the hollow at the root of the nose, taken as the fixed point, to the most prominent part of the back of the head.

The measuring of the width (the maximum transverse diameter) is a little more delicate operation. It differs notably from the preceding in that there is no fixed point and that the extremities of the two branches of the instrument should in this case be removed together *horizontally* and *symmetrically* from each side of the head.

Very important remark: These two observations must always receive a *verification* called the *control*, which consists in fixing the branches of the compass, by means of the thumb-screw, at the distance ascertained by the first investigation, and then trying them again on the head of the subject, modifying the separation of the branches until the desirable double contact is attained (1).

The two diameters of the *right ear* are measured on their maximum axis, by means of a small caliper rule of special make, taking care not to depress in any manner the soft parts of the ear.

These two last operations are the only ones which are performed on the *right* side of the individual, as all the unilateral observations which are to follow should deal with the *left* side alone.

This exception results from the fact that it has seemed preferable to make the measuring and description bear on that ear which it is customary, for various technical reasons, to reproduce in judicial photography.

The *naked left foot* should be measured with care to have the whole weight of the body rest on this foot extended flat on the ground (preferably on a stool), the right foot being lifted and

(1) The measuring of the two diameters, whether at the time of the *investigation* or of the *control*, ought to be effected while holding the arms of the compass almost *horizontally*, and not vertically as is often done as the result of an erroneous interpretation of the illustrations in the last edition.

held backwards. The stem of the large caliper rule employed for this measurement is applied along the foot *on the side next the great toe*. The fixed branch being placed against the heel of the subject, the movable branch ought to touch, without depressing, the extremity of the great toe.

It is needless to say that the anthropometrical length of the foot is different from the *measure* taken by the shoemaker, and that a shoe the measurement for which had been taken in so exact a manner could not be worn. The aim in this case is not to make a pair of shoes, but to obtain a constant length that will be unalterable and that may at any time be taken over again with as much precision as at the time and place of the operation (1).

The *middle and little fingers* of the left hand are measured at right angles from the joint at the back of the hand by means of the small branches of the large caliper rule. These two observations have considerable signaletic value if they are taken exactly according to the instructions.

The *left forearm* is measured from the point of the elbow to the extremity of the middle finger, the forearm being bent at an acute angle with the arm and the hand extended flat on the table, nails upwards. This operation necessitates for its satisfactory performance the use of a table especially high and narrow, in the form of a trestle, the design and dimensions of which have been accurately indicated in plate I of the *Album*. Nothing is easier than to have one of this description constructed by penal labor.

All the measurements of our system of signalment, the reach excepted, are taken by inclosing the part to be measured between two parallel surfaces the distance between which is shown on a graduated bar. In the three calipers employed, the reading of the graduation should be made by turning to the point opposite the

(1) The shoemakers' pointing is equal to about 6.75 millimetres [$\frac{1}{4}$ inch], which gives in round numbers 3 points to each 2 centimetres. The *maximum* length of the shoe measured *exteriorly*, in conformity with the practice of the trade, is from 12 to 20 millimetres (either two or three points) greater than the *anthropometric* length of the foot that it contains.

Consequently, in order to transform the length of a *foot* into shoemakers' pointing, add, according to the case, from 12 to 20 millimetres to the anthropometrical figure and multiply the sum by 3.2. Inversely, to change a *pointing* into a signaletic length, subtract 2 or 3 points and multiply by 2.3 (Dr. Georges Bertillon, *De la reconstitution du signalment anthropométrique au moyen des pièces de l'habillement*, i. e., "On the Reconstruction of the Anthropometrical Signalment by Means of Pieces of Clothing." Inaugural thesis, Paris, 1892).

[Each point represents a size. The men's sizes, 5 to 13, measure 28 $\frac{1}{4}$ to 37 $\frac{1}{4}$ points respectively.]

zero mark (analogous to that used in *verniers*) which will be found about in the middle of the movable bolt. The placing of this mark is determined, in practice as well as theory, by this very simple means, *that the instrument when closed ought to indicate zero.*

It is unnecessary to say that the arrangement of these instruments was the subject of many experiments and numberless improvements before they reached their present shape, which we consider as final. So we reject in advance every modification, every further change, however slight, either in their form or in the manner of using them. That is a great temptation to beginners, to whom numerous new ideas occur, but who are not aware that all these ideas, even those that they believe to be the most original, the most personal, have already been proposed by others, tried and finally rejected for divers reasons.

In reality every change introduced into the anthropometrical manual of operation, whether in its essential parts mentioned above or in the details described in the first part of the *Instructions*, can only result in augmenting the amount of the possible and inevitable error with which human observations are always more or less marred, that is to say, as has been demonstrated above, to weaken, if not to completely annul, the signalletic value of these observations.

The Classification of Signalments

The measurements enumerated here have been taken on the 120,000 subjects who have passed through the prisons of Paris during these last ten years, and copied on as many slips of cardboard, measuring 146 millimetres in length and 142 in width, which are arranged in small movable boxes.

The following are the principal outlines of the method which has presided over the classification of this enormous mass of signalments.

The men are placed on one side, the women on the other. The latter, much less numerous here than the men, do not amount to more than 20,000. From the 100,000 masculine signalments remaining there must be further deducted about 10,000 relating to minors under twenty-one years of age, which require a special classification.

As for the 90,000 signalments of adults, they are first distributed according to length of head into the three following primary divisions:

- 1st div., the *short* lengths of head, comprising about 30,000 signalments.
- 2nd div., of the *medium* lengths of head, about 30,000 signalments.
- 3rd div., of the *long* lengths of head, about 30,000 signalments.

The words *short*, *medium* and *long* are here rigorously defined by figures. Experience has proved it to be possible, after some trials, to fix their values once for all in such wise that each of the three classes shall contain an approximately equal number of signalments. Naturally this result can be obtained only by confining the medium class within narrower bounds than the short or the long.

Thus the numerical limits of the *medium* length of head, according to the usage of the Prefecture of Police in Paris, cover an interval of only six millimetres (from 185 to 190^{mm}), while those of the *long*, which extends from 191 to the greatest possible dimension, include more than three centimetres, for heads more than 22 centimetres long are sometimes met with. The division of the *short* lengths includes in the same way heads 160 millimetres long, for example, along with others of 184, that is to say, 25 millimetres larger. In the threefold division: α to 184, 185 to 190, 191 to ω (1), it is naturally the two limit numbers of the median value which determine the whole system.

Each of these *three* great masses of 30,000 signalments each is again subdivided, without any further regard to the length of head, into three groups, based on the width of head.

It was long since observed in anthropology that the width of the head varies independently of its length. In other words, *it does not follow that because we know the length of a skull we can foresee what will be its width.*

These new subdivisions, nine in number, are made up as follows:

- Those of the *narrow* widths of head - - only 10,000 signalments.
- Those of the *medium* widths of head - - only 10,000 signalments.
- Those of the *broad* widths of head - - only 10,000 signalments.

(1) The two Greek letters α and ω (*alpha* and *omega*) are used here abbreviately to represent: α the smallest or *minimum* and ω the largest or *maximum* dimension with which it is possible to meet.

In their turn these nine subdivisions of 10,000 are each divided into three groups, according to the length of the *medius* or middle finger, giving us a total of 27 under-subdivisions, which now number:

- Those of *small* middle fingers - only about 3,300 signalments.
- Those of *medium* middle fingers - only about 3,300 signalments.
- Those of *large* middle fingers - only about 3,300 signalments.

The length of the foot furnishes a fourth indication, which again subdivides each of the groups previously obtained into three containing about 1,100 signalments each (1).

Then come three subdivisions based on the length of the forearm, which reduce the preceding number to less than 400.

The variations in the height divide each of these last lots into three of about 130 signalments, which are finally distributed, still on the same principle, into classes of *sixty* by means of the variations in the length of the little finger (2), and into classes of *twelve* according to the color of the eye. This last group of twelve signalments is itself arranged according to the increasing values of the length of the ear.

It is thus that, thanks to the six new anthropometrical data (the sex, height, age and color of the eyes having appeared in signalments from time immemorial), the collection of 120,000 signalments at the Prefecture of Police in Paris finally becomes divided into groups of a dozen each!

(1) There is an indisputable relation between the length of the middle finger and that of the foot. The proof of this is the proceeding of the booters, who, when fitting their customers with stockings, ascertain the length of their feet by measuring the circumference of the closed fist. Nevertheless, experience proves that the dependence of one of these measures upon the other is not so strict but what it is possible to distribute a group of subjects having the same *medius* into three equal categories based upon the length of the foot. The independence of one dimension as regards the other increases in proportion to the degree of precision attained in the measuring of each. Nevertheless, the limits of the figures of the tripartite divisions by length of foot change according to the category of middle fingers which is to be subdivided. Thus the medium foot of one of the branchings of the *small* middle fingers will necessarily have other *boundaries* than the medium foot of the *medium* or *large* middle fingers. Each limit needs to be determined separately.

(2) The variations in the length of the little finger, that of the middle finger being given, are not great enough to furnish the elements of a tripartite division approximately equal. In such a case the difference is necessarily in favor of the median division, which is enlarged somewhat at the expense of those above and below; whence the approximate figure of 60 mentioned here, instead of about 40, the number which would have resulted from the division of 130 into three equal parts.

Let us suppose now that we wish to ascertain from the collection whether an individual who has just been arrested and claims to have no judicial antecedents has not previously been classified under another name. It goes without saying that it will be necessary, after having taken an anthropometrical signalment of him, to turn to the division for the length of head corresponding to that of the individual examined, stopping at the subdivision of his width of head, and afterwards looking for the subdivision of his middle finger, then that of his foot and that of his forearm.

Thus, by one elimination after another, the final packet is reached which ought to contain the signalment sought for, if, of course, the arrested person has ever been convicted and measured before.

When one or more of the measurements taken anew on the individual fall on the *limits* of the divisions of the classification, the investigation should be pursued in the various adjoining compartments, exactly as in a dictionary one looks in different places for a word the exact spelling of which he does not know.

These *limit* explorations considerably prolong the investigations when they are required in the case of several of the measures. They should therefore be conducted in a fixed order and according to a mechanical law of combinations which has received from the special employees upon whom the duty falls the characteristic name of *double searches*. In these resides the only difficulty of the anthropometrical identification. They fall, however [in France] entirely upon the personnel of the central service. The results obtained in ten years of practice have demonstrated that this obstacle is very easily overcome.

It will be noticed by this time that the anthropometrical eliminations just indicated do not occur in the same order as that given in the list of the measures to be taken. This latter arrangement, which is that of the card and signaletic formulæ used in prisons, follows the course which ought, as far as possible, to be followed in measuring the subject, in order especially not to have to lay down an instrument until all the indications have been exhausted in the taking of which it is used. It is likewise the order of exposition which has been followed in the chapters of the *Anthropometrical Instructions*.

The order of classification is determined by a consideration of an entirely different kind: that is, of placing at the beginning

those measures which have the greatest signalletic power, that is to say those which are at once the most stable in the same individual and the most variable from one individual to another, in order that the elimination first effected may give the least possible occasion for hesitation and the *double searches* which it necessitates. The latter are more rapidly and easily effected in proportion as they concern the ultimate ramifications of the classification.

It is important to bear in mind that the fact of two signalments being found in the same final compartment does not imply a necessary and absolute agreement between the figures of the two sets of measurements. Even in the *median* or mean division, where the resemblances are much the closest, three categories of dimensions may almost be distinguished, independent one of the other, according as the figure in question borders upon the small division or upon the large, or is intermediate between the two.

A comparison of the numerical signalment on the cards classified in the same final compartment shows that it is well-nigh impossible, in looking at hazard through the anthropometrical files, to find two signalments exactly alike, so that the agreement of the figures comes at last to constitute a *quasi-certitude of identity*.

The rational discussion of the figures of the metric signalment in the ultimate subdivisions of the classification, as well as the comprehension of those cases which approach so near to the limit of our threefold divisions as to necessitate the *double searches* spoken of in a preceding paragraph, presupposes an exact knowledge of the number of millimetres by which two measurements may differ that have been made on the same person at different places and times and by different observers.

We have shown above that it is of the utmost importance that these deviations should be as small as possible. But with whatever care and uniformity the measuring may be done, some differences will always be met with; *it is impossible for it to be otherwise*. It is so much the more important to have fixed rigorously upon the figure that these differences *may reach* but *cannot exceed*.

The measuring of one same individual repeated ten times in succession would almost inevitably furnish in practice ten signalments all differing one from the other by insignificant quantities,

although all equally exact. It is almost impossible, for example, to obtain twice over the same set of millimetrical figures for the height, the trunk and the width of ear (1).

A thorough knowledge of what may be termed the *maximum of tolerable deviation*, or the *requisite degree of approximation*, forms the basis of every administrative verification and of every judicial utilization of the anthropometrical signalment.

In a special paragraph at the end of the technical instructions relative to each measurement will be found a precise indication of this allowance, which varies greatly according to the part of the body measured. It is shown for the whole series in the following recapitulatory table, with all the explanations of which the subject permits.

	A	B	C
	Approximation theoretically requisite (in + or in -).	Discrepancy beyond which GRAVE ERROR begins.	Mistakes of a very serious character, or discrepancies beyond which one is justified in declaring non-identity.
	mm	mm	mm
Height.....	7	15	30
Reach.....	10	20	40
Trunk.....	7	15	30
Length of head.....	0.5	1	2
Width of head.....	0.5	1	2
Length of right ear.....	1	2	4
Width of right ear.....	1.5	3	6
Length of left foot.....	1.5	3	6
Length of left middle finger.	0.5	1	2
Length of left little finger..	0.75	2	3
Length of left forearm.....	1.5	3	6

(1) Thus falls the popular argument which consists in enlarging upon millimetrical differences in the height, the trunk, the ear, the forearm, etc., to prove the non-identity of two signalments. The question here is to know, not whether there are differences (since it is impossible that there should not be some) but how great they are, and especially whether they do not exceed the limits of necessary approximation.

The figures in columns B and C are obtained by doubling and quadrupling respectively those of column A. The latter, which thus determines the whole system, gives us, for each measurement, in millimetres and fractions of a millimetre, the maximum variation which a scrupulous observer is liable to make in *plus* or in *minus* (+ or —) from the true figure (1).

Thus in the case of the height a difference of less than 7 millimetres, either above or below the supposed true figure, is always admissible and could not be characterized as a mistake.

The allowance is the same as regards the trunk.

But for the reach the difference between two measures equally well taken of one and the same subject may rise to 10 millimetres or one centimetre, which is not surprising, this length being the only one in the entire signalment which is taken in round centimetric numbers, that is to say, without adding the millimetres.

As these three observations are likely to be interfered with to some extent by trickery on the part of the subject it will always be necessary in comparing the result to take account also of the corrections and indications which might be mentioned either by way of note or under the heading *curvature*.

The approximation of a *half-millimetre* (0^{mm} 5) requisite in the measuring of cranial diameters and of the length of the middle

Furthermore, an ABSOLUTE similarity in the figures, under such circumstances, far from proving the successive transit of one same individuality through the lock-up of a prison would be an infallible indication of a mistake.

The minute differences in question should then be interpreted as being the incontrovertible and precious evidence that two signalments have been taken independently of each other, at different times, and are not duplicates of one same original.

(1) The possibility of attaining this degree of precision in practice will not be disputed by any anthropometrist of a good school. Moreover, the accuracy of the figures in column A has been confirmed *a posteriori* by scrupulously compiled statistics based on the comparison of more than 400 pairs of similar signalments of adult recidivists who, being again arrested and concealing their identity, were *remeasured* and finally recognised by the service during these last years.

Here is for each measurement the exact figure obtained by dividing the total product of the errors by the number of cases: Height, 6 mm. 7; Reach, 7 mm. 8; Trunk, 7 mm. 3; Head: length, 0 mm. 62; width, 0 mm. 53; Ear: length, 0 mm. 93; width, 1 mm. 3; Foot, 1 mm. 4; Middle finger, 0 mm. 51; Little finger, 0 mm. 66; Forearm, 1 mm. 35.

The figures of column A, although obtained directly by experimentation, seem to be the transcription *in round numbers* of the mean error given by calculation. They are not then the expression of a desire, of an ideal unrealisable in practice, but give a sufficiently exact idea of the approximation which is attained every day by our anthropometric officers when they are operating under the worst conditions, that is to say, on a subject seeking to hide his identity and having an interest in *cheating* and without themselves knowing that these new observations are to be subjected to an ulterior comparison after the recognition of the identity.

finger will surprise at the outset those of our readers who, having had anthropometrical statements in their hands, may have remarked that the smallest decimal employed is the *millimetre*, in other words, that the *half-millimetre* is never mentioned.

Nevertheless, it is easy to assure oneself, on a little reflection, that this degree of approximation is really attained, since discrepancies of one millimetre between two cranial diameters equally well taken on the same subject are only met with in anthropometrical practice when the *true* length falls almost *exactly* between two consecutive millimetrical figures.

The other fractional numbers of the table, to wit: $1^{\text{mm}} 5$ (a millimetre and a half) for the width of the ear and the lengths of the foot and forearm, and $0^{\text{mm}} 75$ (three quarters of a millimetre) for the length of the little finger, are explained in the same way by the necessity of taking account of the errors, either above or below the true number, which by their combination may produce a total non-fractional difference twice as great. The numbers in column A are the only ones in this table which are preceded by the signs + or - (*plus* or *minus*).

The figures of column B, obtained by multiplying the preceding ones by 2, represent the maximum difference which may exist between two signalments *of one same subject*, without either of them, considered separately, having an error larger than that mentioned in column A, that is to say, without *necessarily* indicating that a mistake has been made. Nevertheless, while discrepancies of this nature ought not in all cases to draw censure on either of the observers, they should, whenever possible (that is, whenever the subject is still present), give rise to a *second verification* with a view to making certain that the two divergent values are really both equally distant from the truth, which lies between them.

If it were otherwise, if in the practice of anthropometry divergences so great as those of column B were allowed to creep in **IN ONE SINGLE DIRECTION**, cases would necessarily arise in which these variations, occurring first in *plus* and then in *minus*, would attain an absolute difference equal to the figures of column C. But we have already insisted at sufficient length upon the necessity of attaining the greatest possible precision to make it useless to return to that point.

It should then be considered that a mistake must have been made whenever a comparison of two signalments taken on the

same person discloses an error equal to that of column C (obtained by doubling the figures of column B). The mistake will be slight if it reaches in each signalment only half of this discrepancy (that is to say, the figures of column B); it will be very serious if it is attributable to one alone of the two signalments examined.

Consequently, column C gives us the values *beyond* which one is justified in declaring the *non-identity* of two signalments of whose accuracy one is equally sure.

Theoretically, a single variation greater than that indicated in column C, as for example a difference of three millimetres in one of the cranial diameters, or of six millimetres in the length of the foot, etc., should suffice to demonstrate the non-identity of two signalments. Nevertheless, in view of human frailty, it would be wise to accept this conclusion only after the discovery in another measurement of a farther marked discrepancy.

A knowledge of the maximum discrepancy enables us to appreciate in an intelligent manner the *recognitory* value which should be attributed to anthropometrical signalment, and confirms what we have said above regarding the almost complete impossibility of finding in the collection two concordant signalments, that is to say two presenting *approximately* the same figures although not referring to the same person.

This is a fundamental question which daily arises in the courts. The response to be given varies somewhat according to whether the discovery of the disputed signalment has been brought about: 1st, by means of a judicial inquiry, properly so called; or, 2nd, by a spontaneous search by means of the threefold classification previously described.

Let us begin by examining the first case. The revelations of a witness, the casual admissions of the interested party, a seizure of papers, etc., lead to the discovery in the criminal archives of an old judicial document containing an anthropometrical signalment all the observations of which correspond, within the limits of admissible discrepancy, with those made on the individual present.

No hesitation! the agreement of the figures ought to be regarded in such a case as an absolutely final proof. Witnesses may be led into error by physical coincidences in height, age, and complexion (see plates 59 and 60 of the *Album*). It may also happen that the interested party has been tempted to profit by

such resemblances as have come to his knowledge. But the anthropometrical observations are free from this suspicion, from the very fact that they are necessarily made by the use of instruments of precision. And even if the individual in question were to have at his disposal all the necessary instruments, the whole assembled population of a penitentiary would still be manifestly insufficient to enable him to meet with a single subject having approximately the same measurements as himself. For him to have any chance of succeeding, it would be necessary to suppose that the person in question, having at some period of his life had free access to the central files at Paris, for example, had been able to examine at leisure the final compartment into which his own signalment would fall, in order to find there the name of some subject sufficiently resembling him in his measurements to be confounded with himself. This is an hypothesis the impossibility of which it is needless to discuss.

Even if it were admitted, the chance of meeting an *interchangeable signalment* would be very small. An examination of the second case will demonstrate this to us.

In the presence of an individual who is manifestly concealing his name, investigations methodically carried on in the central archives, without any other clew than the necessary anthropometrical eliminations, have resulted in the discovery of a signalment all the metrical indications of which agree with those of the subject of the inquiry: what degree of confidence should be accorded to such a coincidence? The reply demands some preliminary explanations.

Theoretically it ought to be admitted, indeed, that it is always possible, as soon as we have brought together a sufficient number of signalments, to find among them two which are equivalent although referring to two different individuals. The figures of our measurements varying only within certain fixed limits, the number of combinations that they may present among themselves is equally limited. The whole question seems, then, to be summed up in knowing the number of signalments which must have been collected, in order to afford a chance of finding among them two similar ones.

But to give to this problem a solution which will be at the same time accurate and practical, it is necessary to know of what figures the signalment in question is composed. It is evident, for

instance, that an individual having an exceptionally great height, combined with minimum cephalic diameters, would be very much more easily recognized than if his whole set of measurements corresponded to the average.

These last conditions have been intentionally realized in the following signalment, which has been furnished with figures exactly average, or rather *median*, that is to say, equally distant from the limits of the *small* and *large* divisions of the three-fold classification.

Height 1 ^m 645	Head	{	Length 187 ^{mm}	Foot . . .	299 ^{mm}	
Reach 1 ^m 680			Width 156	Middle finger	114	
Trunk 0 ^m 880	Arm	{	Length 63	Little finger	89	Eye chestnut (4th class)
			Width 37	Forearm	451	

This is the signalment combination which, completed by the indication of an age somewhere between 35 and 40 years, for example, is most likely, theoretically and practically, to be met with in an anthropometrical file (1).

Now an experiment, the accuracy of which we guarantee, and which it is easy to repeat, shows that it is impossible to find an exact duplicate, within a millimetre, in the anthropometrical file of 90,000 methodically classified adult signalments at the Prefecture of Police.

(1) The probability of meeting any specified dimension, height, cranial diameters or osseous lengths, diminishes rapidly and symmetrically in proportion as we depart in either direction from the medium dimension, which is necessarily the most frequent. Thus, while a height of 1 m. 65, which is in France the medium height, is observed (to within 5 millimetres), 60 times among a thousand subjects, the heights of 1 m. 55 and 1 m. 74, which are only ten centimetres removed (plus and minus respectively), are met with only 22 times in the same group, and the heights of 1 m. 50 and 1 m. 79 only 6 times! This distribution has been represented on the curve below, called *binomial* after the mathematical formula to which it seems to be subject.

Each vertical line corresponds at any given height to a difference of 5 millimetres, plus or minus, and its height is proportional to the number of subjects of this stature that are likely to be found in each 1000 persons. The curve would approximately be the same if, instead of arranging the total height centimetre by centimetre, one were to arrange the lengths of the head millimetre by millimetre. In the latter case the central mean dimension, instead of representing a length of 1 m. 65, would have a value of 0 m. 187, and the adjacent numbers would be respectively 182 and 192—177 and 197, etc. The width of the head and the lengths of the middle finger, the foot, the forearm, etc., would furnish similar illustrations, by making the appropriate corrections in the central value and in the mode of grouping. (ovzn)

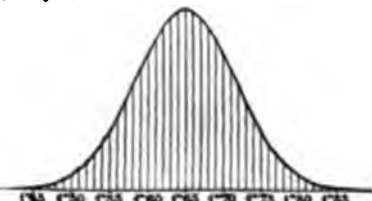


Fig. 3.

The search is equally vain if, in place of an absolute identity in the figures, one contents oneself with examining the signalments which might be confounded with it within the limit of approximation given in column A.

In order to succeed in finding a SINGLE signalment assimilable to the type above-mentioned it is necessary to alter the values *plus* or *minus* by quantities equal to those of column B, differences which are known to be observed only in cases of careless measurement, if not of error properly so called.

But if, instead of imposing upon our typical signalment the still admissible divergencies of column B, we subjected it to the variations in plus or minus given in column C, the result of the search in our files takes on a very different aspect: in place of one corresponding card we find *thirty* of them! It should not be supposed, however, that these thirty signalments, although *confoundable* with our median type, would all be so at the same time among themselves.

In reality, to allow for variations equal to those of column C, in our search through the files, will result in giving to the preceding signalment the subjoined form:

H.	1m	645	\pm	30	Head	{	187	\pm	2	Foot	259	\pm	5
									156	\pm	2	M. f.	114	\pm	2
					Ear	{	63	\pm	4	L. f.	89	\pm	3
R.	1m	680	\pm	4					37	\pm	6	Forearm	451	\pm	6
T.	om	880	\pm	30									

The existence of these rules, which constitute what might be called the philosophy of anthropometry, may be easily verified, for a specified measurement, by distributing a hundred signalments into separate packets, corresponding to the variations observed either by millimetres, or by half-centimetres, or centimetres, etc. For each measurement, the thickness of the packets obtained by the superposition of cards bearing one same figure will grow proportionately to the number of similar cases observed, and will always end by realizing, in a greater or less degree, the theoretic curve.

As has been said above, the increasing frequency of the cases in proportion as the mean is approached demonstrates the inevitable necessity of circumscribing the median division within narrow limits, if we wish to obtain packets of equal size in the tripartite division. Thus, to distribute a human group into three equal parts based on the stature, the median height ought to comprise only subjects of from 1 m. 620 to 1 m. 679 while the small division should extend from α to 1 m. 619, and the large from 1 m. 680 to ω .

On the other hand, one should not go from one extreme to the other by assigning, under pretext of an equal distribution, such narrow limits to the median division that the small and large divisions, being no longer separated from each other save by a merely nominal quantity smaller than the necessary degree of approximation, would be liable to be confounded one with the other. The establishment of the anthropometrical signalment has consisted precisely in the choosing of such osseous lengths and processes of mensuration as would render these conditions practically realizable.

The operation to be performed consists then in the extraction from our file of all the signalments, without exception, which represent a combination of figures comprised respectively between the upper and lower limits indicated in the following table:

H. 1 ^m 615 to 1 ^m 675	Head {	185 to 189	Foot	254 to 264
R. 1 ^m 640 to 1 ^m 720		154 to 158	M. f.	112 to 116
T. 0 ^m 850 to 0 ^m 910	Ear {	59 to 67	L. f.	86 to 92
		31 to 43	Forearm	445 to 457

Now it is evident, to speak only of the height, that while it is within the bounds of possibility for our mean figure of 1^m 65 to be confounded on the one hand with a height of 1^m 62, and on the other with one of 1^m 68, it is *absolutely impossible* to suppose that one and the same individual could have ascribed to him the first time a height of 1^m 62, and the second one of 1^m 69.

The same mathematical discussion applied successively to each of the eleven anthropometrical indications leads to this conclusion, that there are scarcely a dozen cards in the thirty which *agree* within the limits of the greatest admissible discrepancy.

Thus the observation of the facts confirms with sufficient exactness the exclusively mathematical deductions given at the outset of this discussion (p. 24), to wit, the very great difference which must be made regarding the degree of certainty in the identification of two signalments according as their figures agree within the limits of column A and B, or differ by the double quantities mentioned in column C.

It must not be forgotten, moreover, that the type-signalment which has served as a basis for our demonstration is a signalment arbitrarily invented with a view to leading precisely to that one of our fifteen thousand final divisions whose limits are confined within the nearest figures (see note, p. 29), and that to remove one of the values in the same signalment a short distance from the mean would be enough to once more render it almost impossible to discover in the collection a second signalment like it.

From the preceding facts we draw this *practical conclusion* that, when the anthropometrical observations contested by the interested person are submitted to the judgment of a court, the agent or expert charged with the interpretation of these documents should never neglect (after having shown that the figures agree, by indicating that the necessary degree of approximation has been

attained separately for each measurement) to note which of the values are most distant from the mean and how far they are removed from it (see the appendix on the *Verbal Portrait*).

The proof of identity will be so much the surer according as these anomalies of dimension manifest themselves in opposite directions: if, for example, a superior height is associated with a middle finger that is small or merely equal to the general average, etc.

It must be repeated that a signalment approximating to the average in all its parts is very rarely met with, and that, even in this case, an identification based exclusively upon the anthropometrical signalment will be very near the truth, since, even allowing for the enormous errors of column C, it does not permit the confounding of more than ten individuals out of a total of over 40,000 of the same approximate age within fifteen years.

Nevertheless, whatever may be the similarity in the figures of the two signalments, however abnormal from an anthropometrical point of view they may be supposed to be, they could not in themselves be sufficient to satisfy the demands of a court when their discovery is the result of a search by elimination in the central files.

To the argument derived from such an agreement it should really be objected that it is not at all convincing when it has been *wished for, sought after, chosen as such*, among all the cards of an immense collection. The older this collection is and the more it has been increased by the annual accumulation of new signalments the more legitimate will be the doubt.

It is of the first necessity, in order to render the identification indisputable, that it should be subsequently confirmed by a body of independent facts which do not come under consideration during the classification and search of the signaletic card; such is the function of the *descriptive information* and the *statement of peculiar marks*, which ought to be attached to every signalment and are to form the subject of the two following chapters.

II. DESCRIPTIVE SIGNALMENT

The descriptive signalment as opposed to the anthropometrical is that which describes in words, by the aid of observation alone, without the assistance of instruments. Such is the well known type of the signalments still in use for passports, hunting permits, etc.

We intend to show how it is possible to give to the descriptive signalment something of the accuracy of the anthropometrical signalment by applying it to the *method of limits of approximation*.

For this let us turn to the note on page 29, where a preliminary allusion has been made to the law of seriation of dimensions. We have there noted the fact of the regular and symmetrical diminution of frequency in proportion as one departs from the central mean, and our readers have before their minds the form of the curve, mathematically termed *binomial*, which by a stroke of the pen portrays the ensemble of these facts. We have seen that, whatever be the part of the body examined, the same distribution, reproducing the same curve, is met with everywhere.

Now this law has a still more general bearing; it regulates not only the dimensions, but the lines and shapes of men as well as of animals, of living beings as well as of inanimate objects.

All that lives, increases, or decreases, oscillates between a *maximum* and a *minimum*, between which are grouped the multitude of intermediate forms, growing so much the more numerous as they approach the mean and so much the rarer as they recede from it.

This natural law, discovered by the illustrious Belgian, Quételet, finds its explanation in the endless intermingling of creative causes, and more especially, as regards the human species, in the fusion of races, dark with fair, large with small, etc. However it may be *a priori*, we may lay it down as a principle, that our descriptive vocabulary will be so much the more conformable to the nature of things, and consequently so much the more susceptible of being applied with exactitude and facility, the more it is inspired by this universal rule.

Common parlance, the offspring of daily necessity, has no care for these general ideas. Most frequently it has no words at its disposal save for the *extreme, well-defined* cases, which for that very reason are exceptional, and it inconsiderately neglects the *intermediate* ones, that is to say nine-tenths of the cases, for which it only offers the qualifications *ordinary, average, common*, which are all summed up in the term, also much used, of *nothing*.

Thus everyone knows, for instance, what is meant by blue eyes and dark eyes (which we call *maroon*). But when there is question of naming the eyes intermediate between these two ethnic types, the current speech furnishes us only with inexact

words, in which all signs of graduation, of transition from one category to another, disappear. Thus the eyes usually termed *grey, green, red, black*, etc., are, strictly speaking, neither grey, nor green, nor red, nor black, but participate more or less in all these qualifications.

The nose affords us an analogous illustration in the matter of shape. Common language tells us of a turned up or pug nose, of an aquiline or hooked nose, but it would be incapable of furnishing us with expressions for the multitude of noses which are neither distinctly turned up nor distinctly aquiline.

We might multiply these examples, which would all tend to prove that the public does not seek to *describe* but merely to *depict*, which is not the same thing, by means of a comparison or an image, those shapes that strike it, that is to say, the exceptional shapes.

This is unfortunate for the signalment writer, who, taken unawares nine times out of ten, will not know how to express the configurations coming under his notice which do not clearly belong to any of the kinds for the description of which he has terms at his disposal but are rather a mixture of all in various degrees.

Thus the first of the conditions that a methodical notation should fulfil is to observe and transcribe, in appropriate terms, the order and the gradation that is seen in nature. This is the same principle that naturalists, from another point of view, have expressed by the adage, *Natura non facit saltus* (Nature makes no leaps). In this respect no term of ordinary language could exceed the numerical form of expression, on account of the delicacy and seriation of its degrees: that is therefore the ideal which we must seek to approach.

For greater definiteness let us compare the notation of the height of the body, formulated first by means of figures and then by the aid of words only. We all know that a height of 1^m 55, for example, is less than that of 1^m 65, and this latter less than that of 1^m 75; we have no difficulty in supposing as many intermediate values as we wish, ranging from the smallest height to the greatest, by imperceptible degrees, centimetre by centimetre, or millimetre by millimetre.

Let us now seek to replace in the above example, the three foregoing figures by words. The following appellations will immediately present themselves to the mind: *small* height, *medium* height, and *large* height. Their gradation is evident. However, we shall have rigorously fixed their value only when we have determined the lower and upper limits of the central term, in other words, when we know exactly where the small height ends, and where the large begins. Let us *provisionally* take for the first figure $i = 60$ and for the second $i = 70$.

From this determination there will immediately arise a dilemma. Suppose we have before us a height of about $i = 69$; as the errors in this measurement may easily amount to two or three centimetres, we must expect to see the height in question signalized sometimes as medium and sometimes as large, without being able to allege the falsity of the latter appellation.

As the same demonstration can be repeated for heights of from $i = 58$ to $i = 62$, bordering on the lower limit of the medium group, we are obliged to conclude that, when we read on a signalment the indication *medium height*, we may always foresee the possibility of discovering another signalment of the same individual in which the height is noted by the words either *small* or *large*.

The term *medium* loses then any sort of significance for the comparison of two written descriptions, since it may be connected with either of the three degrees of the series, *small*, *medium* or *large*. Now, according to the binomial curve, the *medium* division alone contains half the cases, when the description is made by the eye without the aid of anthropometrical instruments, according to the ordinary methods of observation and notation. As the two extreme terms, *large* and *small*, are in the same manner liable to be confounded with the *medium* term, which is of double frequency, their mention on a description eliminates only a quarter of the whole. We are thus led, in order to give to the term *medium* any significance, to multiply the number of our degrees by interpolating intermediate terms.

The literary expression of these interpolations may take on many forms. Here is one example :

Limits proposed	HEIGHTS						
	1	2	3	4	5	6	7
	Very small	Small, properly speaking	Small, medium limit	Medium	Large, medium limit	Large, properly speaking	Very large
	α to	1 ^m 56	1 ^m 61	1 ^m 65	1 ^m 69	1 ^m 74	1 ^m 77
	1 ^m 53	+ 3 ^{cm}	+ 2 ^{cm}	+ 2 ^{cm}	+ 2 ^{cm}	+ 3 ^{cm}	to ω

It must not be forgotten, moreover, that there is question here of *describing* and not of *measuring*, that the example chosen is purely didactic, and that, as we have said above, the notation of the height in centimetres will always be infinitely preferable to even the most perfect vocabulary. If we have taken this example in preference to the color of the eye or the form of the nose, it is because of the convenience offered by the numerical notation for defining the gradation of terms, and because of the simplicity of the object of the description (the dimension in height), which is manifestly unique and easy to obtain.

The number of grades, moreover, need not necessarily be limited to seven, as above. Thus, one might further add on the left a *dwarf* or extremely small height (from α to 1^m 40), and on the right an extremely large or *giant* height (from 1^m 90 to ω). Here is a distribution into nine categories of a group of 1000 adult subjects :

HEIGHTS	LIMITS	NUMBER OF CASES
Dwarf and extremely small -	α to 1 ^m 40	0.05
Very small - - - -	1 ^m 47 +6	35.95
Small, properly speaking -	1 ^m 56 +3	148
Small, medium limit - -	1 ^m 61 +2	198
Medium - - - -	1 ^m 65 +2	236
Large, medium limit - -	1 ^m 69 +2	198
Large, properly speaking -	1 ^m 74 +3	148
Very large - - - -	1 ^m 83 +6	35.95
Extremely large and giant -	1 ^m 90 to ω	0.05
Total - - - -		1000

A seriation of this kind may be recognized as containing a *sufficient* number of subdivisions when confusion between two consecutive qualifications may take place readily and without inconvenience. One may be assured, on the contrary, that the intermediate cases have not been too much multiplied, in other words, that there is only the *necessary* number, when it is seen that it would scarcely be possible to skip a category and confound together two subdivisions separated by one or more intermediate ones.

In fact the more numerous the terms of the graduation, the more precise will be the description. But this increase would cease to be useful and become cumbersome if one should reach the point of differentiating in words what it would be impossible to distinguish in practice.

The objection that we made to the tripartite descriptive division that in it the word *medium* retained no sort of signalitic value, is thus obviated. What is *medium* proper is still liable to be qualified either as *small medium limit*, or as *large medium limit*, but the four other categories will always be eliminated.

When what we have said previously on anthropometrical approximation is remembered, it will be immediately evident that the result is theoretically attained only when the narrowest step in the graduation (which is necessarily the middle one) is approximately equal to the *maximum degree of divergence* admissible in description. This condition is necessary and sufficient to assure to a descriptive vocabulary the maximum of precision with a minimum of terms.

However, it will be seen in the sequel that it will hardly do in practice to go beyond *seven degrees* in the *descriptive* gradation. We will indicate the method to which we have resorted for representing the progression in an abbreviated way: it consists in replacing the word *limit* by a parenthesis surrounding the appellations *small* or *large*, and in underlining these same terms to express the word *very*. Represented in this manner the gradation takes the following form:

1	2	3	4	5	6	7
<u>small</u>	small	(small)	medium	(large)	large	<u>large</u>

The parenthesis has the effect of approximating to the *medium* the term that it incloses, and the underlining that of removing

from it. The latter is equivalent to the adverb *very*, and the parenthesis to that of *slightly*: *slightly small* (no. 3), *slightly large* (no. 5).

Here, as in the above illustration taken from the height, the words *small*, *medium* and *large* must be interpreted only as landmarks destined to be ultimately replaced by a seriation of terms more especially appropriate to the observation that one has in view, such as *light*, *medium*, *dark*—*elevated*, *horizontal*, *depressed*, etc. Thus, this last seriation divided into seven heads would become:

1 2 3 4 5 6 7
raised raised (raised) **horizontal** (depressed) depressed depressed

The following chapter will permit us to pass in review the whole of this vocabulary.

Here, by way of illustration, is the classification of 1,000 subjects into seven categories represented, 1st, on the binomial curve of the height (fig. 4) and, 2nd, by means of a series of rectangles with the same base, but with a height proportional to the number of cases covered by each (fig. 5).

The comparison of these two sets of figures shows clearly how possible it is to succeed in equalizing somewhat the distribution of the cases by means of a progressive widening of the limits of each category. Only the extremes (that is to say, the terms underlined) remain on the right and left with an insignificant number of cases.

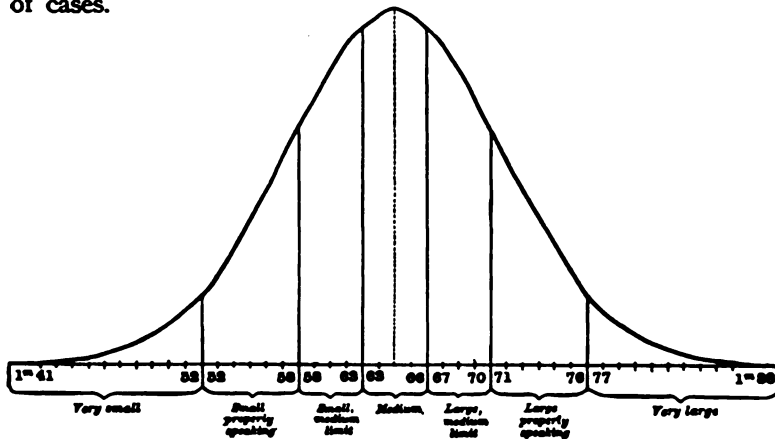


Fig. 4. BINOMIAL CURVE OF THE HEIGHT on which the positions of the seven categories of height are separated by vertical lines.

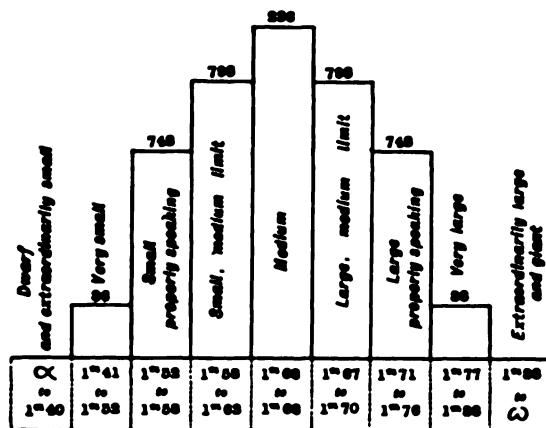


Fig. 5. DIAGRAM OF THE HEIGHT, indicating by the proportional height of the columns the number of subjects coming under each of the seven categories of height indicated on the binomial curve.

The Headings for the Descriptive Signalment

The first difficulty to be overcome when it is desired to establish the descriptive vocabulary of any organ, such as the eye, the nose, etc., is that of selecting among the multitude of characters those which vary the most. When this first choice has been made it remains to be discovered how much they vary.

Whenever there is a variation from one subject to another we may be assured, as already observed, that the distribution of the individual cases will be according to the binomial curve. But often it is only after a delicate analysis that one can succeed in discovering the special point of view from which a characteristic should be examined in order to bring its serial variation into clear relief. The problem should be considered as solved only when the series of headings, tried upon some hundreds of subjects, shall have shown itself, in the statistical abstract, to really apply with a frequency symmetrically decreasing from the median part to the two extremes.

Another obstacle with which one has to contend arises from the presence in current speech of expressions which, though very characteristic, bring together various attributes, and consequently cannot be given a place as such in any series. Often two descriptive terms that are currently applied to the same organ, and in

which, on account of the characteristic exaggeration which they express, one would be tempted at first to recognize the two extremes of one series, refer in reality to entirely different qualities.

Thus, for example, we commonly speak of the *ruddy* complexion of a drunkard, and of the *swarthy* complexion of a mulatto; and yet it would be impossible to find a natural series of intermediate terms leading from one to the other. This is because the complexion is the result of a combination of two elements which vary independently: the *sanguineous coloration* and the *pigmentary coloration*. The first term considers only the greater or less quantity of blood that the transparency of the skin allows to be seen; and the second the variations of the yellowish matter which colors more or less abundantly the skin of all human beings, even of members of the white race. The drunkard often presents the maximum of *sanguineous coloration*; the mulatto presents an exaggeration of the *pigmentary coloration*. No correlation can be established between these two characters, each of which is the extreme of a special series requiring a special heading.

In general, to obtain the series of intermediates constituting a binomial group and leading from one extreme to the other, it is necessary to carry the analysis and decomposition of the characteristics to such a point that it becomes possible to reply to each heading by one of the qualifications *small* or *large* or by a series of analogous terms.

But, it will be said, this analytical decomposition carried to extremes will lengthen out the description and render it inapplicable by excess of complication! In reality, it is rather the opposite phenomenon which will appear. It must not be forgotten that there is question here of responding to *printed formulæ*. Now, it will take less time for the observer to satisfy two or three questions requiring but simple answers, foreseen and prescribed, than to seek in his own head for the proper word to express the same things all at once, even supposing that it exists.

We will indicate rapidly the manner in which the problem has been successively met and solved for each part of the descriptive signalment, confining ourselves, as far as possible, to the question of method and referring any reader who may desire to make a more practical acquaintance with the subject to the text of the

Instructions proper. The reader of these general views and summaries will at least have the advantage of familiarizing himself with the terms of our vocabulary.

The qualifications prescribed for noting the color of the beard and of the hair do not differ from those ordinarily employed by the public at large; *blonde*, *chestnut*, and *black* forming a three-fold scale which is brought up to seven by the addition to the two first of the words *light*, *medium* or *deep*. The *mahogany red*, *blonde red* and *chestnut red* should be considered as forming a separate series parallel to the first and leading by insensible transitions from the most vivid red to the deepest auburn.

The complexion or coloration of the skin will be analyzed, as previously observed, according to the intensity: 1st, of the yellow pigmentation; and, 2nd, of the sanguineous coloration. Each of these will be answered by the words *little*, *medium* or *great*.

The notation of the hue of the iris presents more difficulties. It is commonly said among the public at large that the color of the eye changes several times a day according to the state of the spirits and the health of the subject, etc. These beliefs have no serious foundation; the truth is that the iris, shaded by the overhanging superciliary arcades, is greatly influenced by changes in the direction of the surrounding light; so the first condition to be fulfilled in order that the observations may be comparable among themselves is to have them made under identical conditions of illumination. "The operator," say the *Instructions for Signalment*, "should place himself opposite his subject, at about thirty centimetres from him, and with his back to the light, in such a manner that a clear bright light (but not the rays of the sun) falls upon the eye to be examined. Then he should direct the subject to look him directly in the eyes, while he slightly raises the middle of the left eyebrow."

A few observations practiced in this way will suffice to show that the color of the eye, as it appears from a distance, results from the fusion of two independent elements: the *ground tint of the eye*, which varies between the two extremes of azure blue and slate blue, and the *intensity of the orange-yellow pigmentation*, which is superficially grouped in the areola around the pupil (see the special chromotypographic plate).

It is necessary, then, in order to arrive at a serial notation, to consider each of these two zones separately. It is the orange-

yellow areola which affords the most clearly distinctive elements, the ones easiest to classify. It will be qualified by the words: *pale, yellow, orange, chestnut or maroon*, according to the degree of intensity of the pigmentary hue (1).

The first term, *pale areola*, relates to eyes richly provided with whitish striae radiating from the center towards the periphery but containing no yellow matter. This is class 1, the first degree in the scale. A dash replaces the indication of the areola when the latter is scarcely apparent, a peculiarity which implies the absence of pigment and the uniformity of the azure or slate-blue shade.

As to the eyes with a *maroon* pigmentation, they are subdivided into three classes, according to whether the dark brown matter, 1st, remains confined around the pupil; or, 2nd, invades the whole iris, while allowing the ground-color to appear in greenish-yellow striae or sectors; or, 3rd, covers the entire eye with a uniform, velvety deep brown.

The complete series:

- (1) *Unpigmented eyes* (with or without a pale areola); (2) eyes with a *yellow areola*; (3) with an *orange areola*; (4) with a *chestnut areola*; (5) with a *maroon areola* grouped in a disc or circle around the pupil; (6) with a *maroon areola* covering *incompletely* the whole iris; (7) with a *maroon areola* covering *uniformly* the whole iris.

follows a progression which satisfies the requisite conditions of gradation previously indicated, in that it permits of passing insensibly, step by step, from the blue eye (azure or slate) of the fair races to the deep maroon eye of the Arab. Each class may be confounded either with the preceding or the following, with the exception of classes 5 and 6, which, differing only in a detail of structure, form in a certain sense only a single subdivision. So it is almost impossible to skip a class, to confound the unpigmented eye (class 1) with the orange (class 3), and the latter with the incompletely maroon (classes 5 and 6). Class 7 (pure maroon) can only give rise to hesitation as between it and class

(1) These terms are borrowed for the most part from the paragraph in which Buffon analyzes and describes the aspect of the human iris. Only the classification and serial arrangement of the terms are due to me: and even these have not escaped the observation of Aristotle, who assigned "three principal colors to the iris of human eyes: 1st, blue; 2nd, dull orange; and 3rd, black-brown."

6, etc. The doubtful cases are indicated on the cards by the mention, under the proper heading, of *one* or *several* class numbers separated by a hyphen. If the observer believes himself to have reached absolute certainty he enters only the number of the class which he has in view; if he hesitates between two or even three numbers (*maroon* classes), he adds to the most probable number those of the classes with which confusion seems possible.

In regard to the ground-tint, it is, as above remarked, either *azure* or *slate blue*, or *intermediate* between these two tones, that is to say, more or less a *violet blue*. It is this last shade, the *intermediate*, that one meets most frequently in the descriptive formulæ of the iris; it recalls in some sort by its name and use the *neutral* color of the water-color boxes. The intensity of the surrounding light has a much greater influence on the ground-tint than upon the orange-yellow pigment. A given eye examined in the proper manner and by the same observer will seem to have an azure ground at noon and an intermediate, or even a slaty one, four hours later. So this second element (the ground-tint) does not enter into the classification; the heading referring to it appears on the forms only by way of a complementary descriptive indication. In fact, it is precisely to the elimination of this element that our classification, based on the pigmentary intensity, is indebted for its relative simplicity.

We would note, however, that the singleness of the point of view in which we were obliged to place ourselves for the classification has not been without some anomalous results.

Thus, for instance, class 1, that of the unpigmented, unites in itself both azure blue and slate blue eyes whenever they are devoid of yellow matter, however dissimilar they may be at first sight. Now these two categories, *azure* and *slate* (or more generally, the series with light grounds and with dark grounds), persist from one extreme to the other, at the same time approaching each other progressively, as one passes from the unpigmented towards the maroon eye, until on the point of being confused together.

This idea of approximation, of progressive contraction, has been expressed schematically in fig. 6 by means of a number of lines which, at first very divergent, gradually approach one another until on the point of fusion. The lines in the upper third of

this diagram represent the azure eyes, those in the lower third the slaty eyes, and the middle third the eyes with a periphery

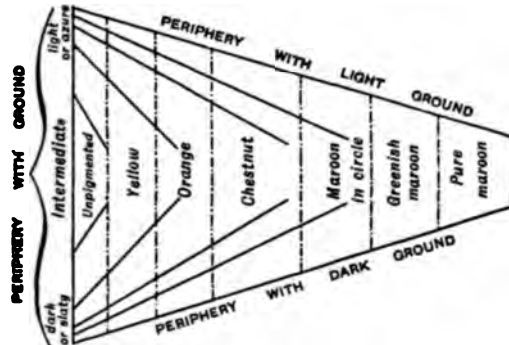


Fig. 6. Schema indicating, by the convergence of the lines towards the central horizontal axis, the progressive approximation of the shades of the periphery of the iris in proportion to the increase in the pigmentation.

intermediate between azure and slaty. Finally, the cone with a horizontal axis thus formed is cut vertically into as many slices as there are classes in the pigmentary series, that is to say, seven, and the intervals between the sections are so arranged that

the enclosed surface is proportional to the number of irises observed in France for each of these categories.

The same phenomenon is equally manifest from an examination of the chromotypographical plate of the iris annexed to the *Album*.

It is there manifest at first sight that the eyes of *groups* 5, 6 and 7 present much more analogy among themselves than those of *classes* 1, 2 and 3; but this plate, which allots an equal number of specimens to each category, gives no idea of the relative frequency of the different types observed among Europeans. Furthermore, it makes no pretense of offering a specimen of all kinds of irises; their number is almost infinite, and it is impossible to meet with two exactly alike.

It is not necessary then to attempt to find an exact copy of the eye whose hue we wish to define.

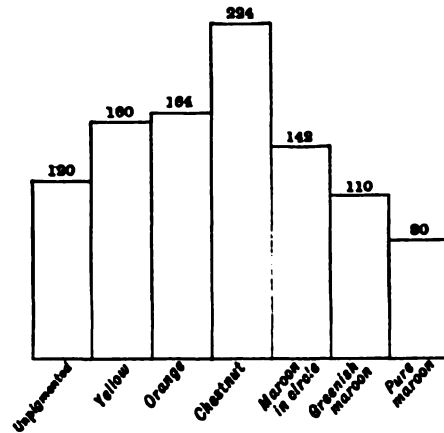


Fig. 7. DIAGRAM OF THE SHADES OF THE IRIS. indicating by the proportional height of the columns the relative frequency of each of the seven categories.

The chromatic table merely enables one to ascertain under which of the types represented the eye observed would have to be ranged, and by which *class number* it should be noted. Now that is the principal point; the complementary descriptive details are easily deduced from it. They might even be very much simplified.

Thus the notation of the various patterns of areola should be regarded in many cases as a superfluous indication. We would be almost tempted to say the same of the indication of the tone (light, medium or deep), the use of which is obligatory only in the signalments intended for the anthropometrical file. Whenever an ordinary descriptive signalment is in question, every eye may be described in a very simple way by the help of two qualifications united in a formula of this kind; slight or strong areola, *pale yellow*, on a *slaty* ground, or *orange* areola on a *greenish intermediate* ground, or *maroon* areola on a *greenish-yellow* ground, or, again, for the two extremes, *iris uniformly azure* or *slaty* or *maroon*.

We are of the opinion that this method of notation, thus disencumbered of accessories which are of little use except in the identification room, will eventually be used in the signalment on passports, hunting-permits, etc., the descriptive value of which it will increase ten-fold.

Morphological Characteristics having Special Headings on the Signalment Card

These headings refer to the description of the *forehead*, of the *nose*, and of the *ear*. The reader will possibly be surprised, when he first glances over the card, at the multiplicity of relations under which we have felt bound to analyze the structure of the countenance, and especially of the ear. We have already shown above that the difficulty of the replies is not proportional to the number of questions put, but rather the reverse, so long as each relates only to a single point of view. The complete description of the ear is not, moreover, an obligatory part of the anthropometrical signalment. Only the **forms or dimensions distinctly extreme**, called *anomalies*, of which the different parts of this organ are so often the seat, **should be made the subject of remark in any and every case**. If the instructions and headings on the card for this part of the visage are especially explicit, it is because no organ is superior to it for assuring the recognition of a subject after an interval of many years.

But where the transcendent merits of the ear for purposes of identification are most clearly apparent is when there is question of solemnly affirming in a court of justice that some old photograph "is well and duly applicable' to such and such a subject here present." One may say indeed, thanks on the one hand to the immutability of the shape of the ear throughout life, and on the other to the great number of varieties of configuration which it presents, that it is impossible to discover two ears alike, and that an identity in its pattern is a necessary and sufficient condition for the confirmation of the individual identity (1).

This is a truth which we have ascertained by ten years of experiment. But to make it penetrate the consciousness of a court or to impregnate with it the practical sense of police officials, a mere affirmation, even the most categorical, is insufficient. It is necessary, in order to produce this *intimate* conviction, that a preliminary investigation supported by experimental verification should have demonstrated to each the accuracy of the fact. How, for example, could a functionary be able to appreciate the greater or less degree of certitude of identity which results from the concomitant presence in two photographs of the ear of *an antitragus with a horizontal inclination and a rectangular profile* if he had not satisfied himself long before that that very part was quite as likely to have a projecting outline with a generally oblique direction. If he does not know the series of all the possible forms of the antitragus, a resemblance of this kind will signify nothing to him; he will believe it natural, normal, presented by all with few exceptions. Oftener, indeed, not knowing the signaletic importance of this detail of the structure, his eye will not even perceive it on the subject: because the ear, which, as we have said, is the most important organ for identification, is, at the same time, that which attracts least the notice of the masses. Our eye is as little accustomed to look at it as our language to describe it. Now, that which escapes our language, escapes also our vision; we see only that which we are able to describe, as we have said in the preface with which this volume opens.

(1) See on this subject, in the *Album*, the 96 photographs of ears, all different, reproduced on a scale of *one-half* FROM EXISTING TYPES. An exception should be made in the case of twins (see *Album*, pl. 60 b).

This important remark, which has inspired the creation of the *verbal portrait*, is quite as applicable to the morphological study of the *forehead*, of the *nose*, and of the other parts of the countenance which are included under the heading *characteristic traits*.

The review of the descriptive terms that we are about to present here to the reader in a speculative form, without regard to practical application, will enable him to make a preliminary theoretical acquaintance with our vocabulary. But only the text of the instructions will furnish to the practitioner, the writer of signalments, ideas arranged with a view to daily application.

*Exposition of the Various Points of View at which the
Morphological Vocabulary Aims*

The first rule of all, the foundation of every description, is the separation, in the analysis, of the form from the dimension. When, for example, in speaking of the mountain of Puy-de-Dôme, one says that it has the shape of a sugar-loaf, it is evident that the image evoked by these words needs to be completed by the indication of the height of its summit above the underlying plain.

In the description, the heading *dimension* is uniformly answered by one of the qualifications *small*, *medium* or *large*. On the regulation cards printed by the Penitentiary Administration of France, the headings relating to dimensions are distinguished by their *capital initial* from the other questions which refer to the form and require a more specialized descriptive vocabulary.

In regard to the *form* properly speaking, it will be considered, as far as possible, under various aspects, or profiles, which resolve themselves into *lines*. These *lines*, once isolated, should be described either according to the shape of their *outline*, or according to their general *direction* or inclination, or even under these two points of view successively, according to the kind of morphological variations commonly presented by the organ in question.

The various kinds of *linear outlines* are all included in the series of which the type is furnished by the forms of the ridge of the nose seen in profile, to wit: "*cave*" (for *concave*), *rectilinear*, and *convex* (fig. 8).

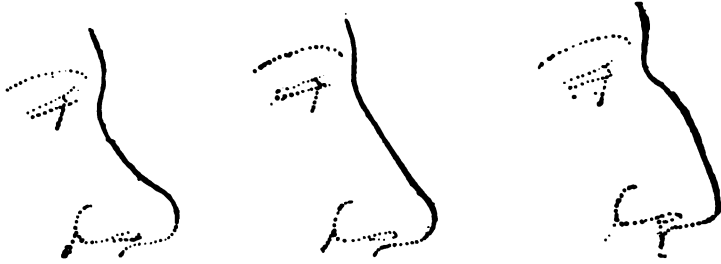


Fig. 8. Nose with ridge (con)cave, rectilinear and convex.

For the nose, but for the nose only, it is advisable to establish a series parallel to the preceding to allow the registering of the *sinuous variety*, to wit: [con]cave-sinuuous, rectilinear-sinuuous and convex-sinuuous (fig. 9).

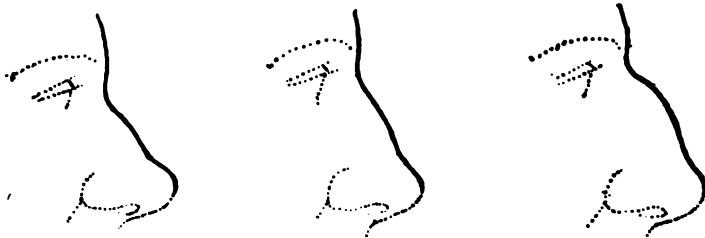


Fig. 9. Nose with ridge [con]cave-sinuuous, rectilinear-sinuuous and convex-sinuuous.

When there is question of the description of the ear, the preceding series are replaced by others the terms of which are more especially appropriate to each character. Thus the *degree of openness* of the border which hems the posterior contour of the ear will be expressed by the gradation: *open, intermediate, adhering* (fig. 10).



Fig. 10. FORMS, *open, intermediate* and *adhering*, of the posterior border of the ear.

The *exterior contour* of the lobule will be similarly qualified, according to the case, by one of the four following terms:—*descending*—*square*, *intermediate* and *gulfed* (fig. 11).



Fig. 11. LOBULE with contour *square*, *intermediate* and *gulfed*.

The *descending* form, placed between dashes, is an anomaly which is rather rarely met with; it is important to describe it, but from the point of view of the *binomial* grouping of the terms it ought to be included with the square form.

The profile of the antitragus will be expressed in a similar way: —[con]cave—(an anomaly outside the series), *rectilinear*, *intermediate* and *projecting*, according to whether the horizontal projection of this cartilage traces a line with superior concavity, rectilinear, slightly sinuous, or clearly projecting. This latter word has seemed more appropriate in this case than convex (fig. 12).

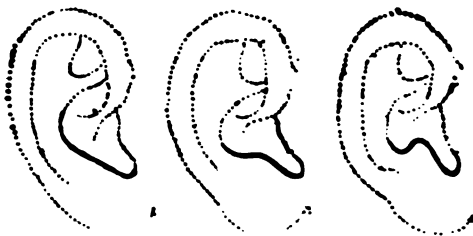


Fig. 12. ANTITRAGUS with profile *rectilinear*, *intermediate* and *projecting*.

But the standard series: [con]cave, *intermediate* and *convex*, reappears, almost in the same form as for the nose, in the indication of the degree of torsion of the lower portion of the interior fold of the ear—the *anthelex* of the anatomists (fig. 13).



Fig. 13. INTERIOR FOLD with horizontal section (con) *concave*, *intermediate* and *convex*.

Finally some parts of the ear require to be considered also in relation to the model of their surface, whence the series *blending*, *intermediate*, *separated* (fig. 14), which expresses the manner of adherence of the lobule of the ear to the cheek, considering only the degree of accentuation or prolongation of the furrow which, in two cases out of three, separates it from the cheek (fig. 14), and

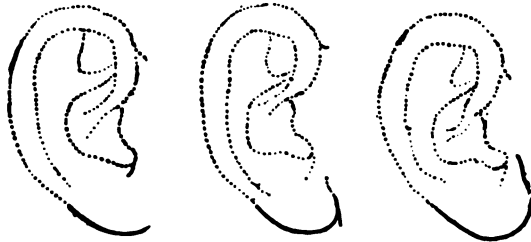


Fig. 14. LOBE with *blending*, *intermediate* and *separated* adherence.

the series *channeled*, *intermediate* (or *smooth*), and *elevated* (fig. 15), which relates to the form, either hollow or rounded outward, of the surface of the lobule (fig. 15).

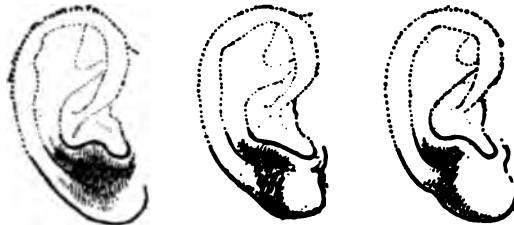


Fig. 15. LOBE of models *traversed*, *intermediate* (or *smooth*), and *eminent*.

In the same way the antitragus will be called: *turned*, *intermediate* or *erect*, according to the degree to which this little cartilaginous projection is turned outward (fig. 16).

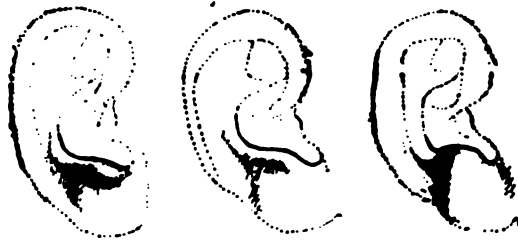


Fig. 16. ANTITRAGUS turned (outwards), with *intermediate* bending, and *erect*.

But the preceding point of view is already connected much less with the *outline* properly so called, than with the *direction* or *inclination* of the line. This last will be described in a first series as *horizontal*, *intermediate* or *oblique*, according to the degree of obliquity of the general outline of the antitragus (fig. 17).



Fig. 17. ANTITRAGUS with inclination *horizontal*, *intermediate* and *oblique*.

The same terms might be applied, if necessary, to the inclination above the horizontal of the median branch of the internal fold of the ear (original branch of the anthelix).

A second series, *receding*, *intermediate* and *vertical*, will furnish the special adjectives used to designate the inclination of the profile of the forehead (fig. 18).



Fig. 18. FOREHEAD with inclination *receding*, *intermediate* and *vertical*.

The third series, *elevated, horizontal, depressed*, will serve to define the inclination of the base of the nose (fig. 19).



Fig. 19. Nose with base *elevated, horizontal* and *depressed*.

The following diagram gives us an idea of the serial value which should be attributed to these different terms.

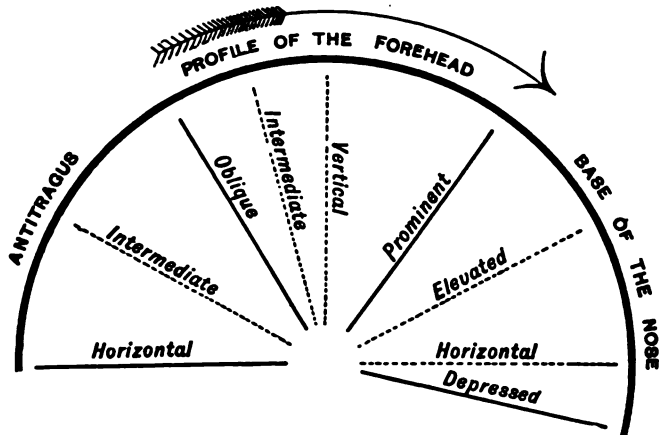


Fig. 20. SCHEMA OF THE VARIOUS DEGREES OF INCLINATION observed on a human profile (right side).

In the notation of the *outline* as well as of the *inclination*, we have sought to arrange our characters in a sort of *crescendo*, that is to say, commencing as much as possible with the characters which pass, either rightly or wrongly, as the lowest, the least noble.

It will be noticed as a curious circumstance that the degree of inclination of the radiating lines of our diagram progresses from left to right in the same direction as the serial arrangement of the qualifications prescribed, which direction is also the same as that in which a screw turns.

Lastly it should be well understood that, although our vocabulary is always indicated here under its *tripartite* form, it may be increased in practice to seven degrees by the proper use of the parenthesis and underlinement.

*Complementary Characteristic Features Not Represented by Headings
on the Signalitic Card*

Three lines only have been reserved to this heading on the signalitic card. On these is noted the description of such physiognomical features, other than those of which we have been speaking, as may be found to present any exceptional peculiarities; such for example as very *frizzly* hair, bushy eyebrows, a very large mouth, a chin particularly receding, etc. It would have been impossible to allot to each of these parts of the visage headings as extensive as those for the forehead, the nose, the ear, etc.; nevertheless it was necessary to leave some space for their description. For the faces are very rare which, outside of the parts to be described in all cases, offer an assemblage of features so regular as to give occasion for no characteristic remark.

Our descriptive signalment thus finds itself completed by all the really useful information furnished by the old formulæ still in use on hunting-permits, passports, etc., where a single line is uniformly devoted to the description of each part of the countenance in succession. Whenever the reply to one of these old headings would deviate from the medium or ordinary, etc., it should be mentioned on the new card under *characteristic features*.

In other words, in the application of the method of notation explained in the preceding chapter, there should be noted in the paragraph on characteristic features only those qualifications which would have been underlined in a complete description.

At bottom, this proceeding is the same as that to which we have daily recourse in popular language, when, naturally and without any thought of method, we wish to give a hasty description of an absent person to one of our friends. We instinctively eliminate all the characters that are valueless, indifferent, or medium, which for the very reason that they represent the average escape our memory, while the typical and really signalitic characters, to the number of two or three at most, survive alone amid the confusion of our recollections.

It matters very little in what terms the notation of the characteristic features is formulated. The details and expressions that will be found in the *Instructions* and that it would be idle to repeat here are there given with a view more especially to serving as a guide in the preparation of the *verbal portrait* (see Appendix B). We recommend that *their study be deferred until a theoretical and practical acquaintance with all the rest of the volume.*

In Paris, where a special photographic service permits of the taking of a great number of photographs every day, under conditions of extraordinary cheapness, it is the rule in all cases where the subject is photographed to postpone the morphological description, even in what concerns the forehead, the nose and the ear, until the time, which for many never arrives, of a new judicial inquiry.

In fact, photographic portraits in two poses, profile and full-face, are taken there under conditions of such accuracy that the physiognomical analysis can always be made by their means with as much precision as if it had been taken on the living subject. Hence in most of the cards with photographs classified in the anthropometrical files of Paris the descriptive headings are left blank, with the exception of course of the chromatic indications, which it would be impossible to reconstruct exactly from an examination of the photograph.

The preceding considerations lead us to make some remarks regarding *judicial photography*. While the help which our method receives from photography in the establishment of identity must not be exaggerated, it cannot be denied that it makes the process easier and surer in the case of verifications to be made by means of the collection of subjects arrested and photographed in Paris at less than twenty years of age.

The fundamental principle of judicial photography rests on the necessity of observing a rigorous uniformity of pose and reduction, under conditions which we have been the first to define.

The two poses chosen as being the most easy to reproduce identically are: 1st, the perfect profile, and 2nd, the full face.

The reduction of the portrait (1/7) is such that 28 centimetres measured on a vertical plane passing through the outer angle of the right eye give an image of four centimetres on the plate.

We could not insist too strongly upon the necessity of always taking the likeness of subjects **bareheaded**, whenever identification is in question.

The study of the two hundred collographic portraits which form the second part of the Album and which have been reproduced exactly, without retouching of any sort, according to the conditions of pose, light and reduction indicated above, will constitute, for all persons whose duties require them to make use of judicial photography, an excellent preparatory exercise for the eye.

It may be remarked, as to the morphological significance of these likenesses, that the *average, medium or intermediate* types have been inserted only in the case of those characters that have on the card special headings to which answers have to be given in all cases. Those characteristic features, on the other hand, which should be mentioned only in the extreme cases are represented by the two opposite forms only. Whence this conclusion, that it is preferable, in looking over the first portion of our series of portraits from a picturesque point of view, to compare the two extreme types by skipping the intermediate likeness, the presence of which diminishes the *contrast* between the other two.

III. SIGNALMENT BY PECULIAR MARKS

The heading, *peculiar marks*, has from all time appeared on the forms for the old-fashioned signalments, but there was then only one line reserved for it, which was almost always occupied by the word *none*.

The new signaletic cards contain under this head thirty lines, of which 5 or 6 at least should always be filled.

Every one, in fact, has some peculiar marks, often unknown to himself; I mean by this *moles, scars of cuts on the fingers, scars of boils, etc.* But the noting of these marks, to which but little value was formerly attached, becomes really useful only when the most rigorous precision has been exercised in their *description* and in the notation of their *locality*.

The ideal to be attained would be for it to be made possible for a person operating in another place, when he reads a statement of this kind, to reproduce on his own body designs imitating exactly, as to general aspect, form, dimension and position, the marks of the individual described.

Thus it is less the *existence*, the *actual observed presence* of this or that *peculiarity*, which characterizes an individual, since the same might be found on any of us, than its exact *localization*.

It is easy to demonstrate that THE SIGNALLETIC POWER OF A PECULIAR MARK INCREASES IN GEOMETRICAL PROGRESSION ACCORDING TO THE PRECISION WITH WHICH IT HAS BEEN DESCRIBED.

If we feel obliged to repeat here the demonstration of this fact, it is because it affords us an opportunity to review in passing the several anatomical terms with which it is indispensable for us to be familiar.

Let us suppose an anthropometrical signalment bearing under the title *peculiar marks*, these words simply: *a scar on the chest*. Certainly this is a description which has already some value. But it is easy to understand that its descriptive power would have been exactly doubled, if the supplementary information had been added: *on the left (or right) half of the chest*. As there are as many chances that the scar in question will be on the right as on the left, the indication *on the left half of the chest* has a descriptive value equivalent to that of: *two scars on the chest* (without stating on which side).

Let us increase the number of determinatives. If to: *a scar on the left half of the chest* we add the qualification *oblique* (or *horizontal* or *vertical*), the observation is again doubled in value and becomes equivalent, following the same reasoning as before, to one reading merely: *four scars on the chest*.

Similarly if we add *oblique internal* (1), as there are quite as many chances for the scar in question to be *oblique external* as *oblique internal*, the signalletic value is thereby doubled once more, and the complete mention: *scar oblique internal on left chest*, has the same importance from the point of view of signalment as an entry in these words only: *eight scars on the chest*.

To these attributes we add: *at.....centimetres from left teat*, or better, *at.....centimetres UNDER left teat*, or, with even more precision: *at.....centimetres under left teat and at.....from the median line*.

We pursue the enumeration by giving also the *length* of the scar, its *form* and, if possible, its *origin* (*knife thrust, abscess, burn,*

(1) That is to say, the direction of which (prolonged from above to below, *descending*) inclines towards the middle of the body. In the interpretation of all our indications of direction and obliquity one should *proceed from above to below*.

etc.) and we can prove, on the same principles, that the complete description, drawn up according to the rules that we are to indicate in this volume, possesses the same value from the point of view of signalment as a formula of this kind: *thirty-two or even sixty-four scars observed on the chest of this individual.*

Only a lack of experience prevents us from discerning at once the value for purposes of the identification of an indication like this: *mole on back, at 18 centimetres under 7th vertebra (prominent vertebra of the neck), and at 10 centimetres to right of vertebral column*, while the equivalent formula: *sixty-four scars on the back*, would leave us convinced that a very limited number of individuals in the entire world would be likely to present such a characteristic.

This process of reasoning presupposes that the different attributes of a peculiarity to be described are independent of each other and that the presence of such and such a mark or scar indicates nothing as to the coexistence of others. In fact this is not rigorously exact; the exercise of a trade, that of shoemaker, for instance, will occasion among all the members of that fraternity marks corresponding in their direction and location to the strike of the sciving knife. The hands of founders, tanners, etc., will present scars of burns approximately similar in their aspect and position. Whence the necessity, from the point of view of identification, of varying the choice of signs to be noticed in one same subject.

There is another species of peculiarities demanding still more caution than the scars and marks of professional origin, we refer to *tattoosings*.

It is an error to believe that the mention of one or two tattoosings can by any means take the place of the notice of a scar; these indications are as *treacherous* in practice as they appear convincing at the first glance. When a criminal plans to disguise his personality, his first care is to surcharge his old tattoosings, and to cover himself if possible with those of the comrade whose civil status he wishes to usurp. This is the A B C of the profession. For some years past, it has not been rare to meet with scars left by old tattoosings more or less perfectly effaced by Dr. Variot's method. The scar may be only slightly apparent, but it always exists.

These various manoeuvres should be nullified by mentioning with exactness on the card not only the significance of the design

but also its dimension and location. Moreover, whatever may be the number and significance of the tattooings noted, they ought never to prevent a careful observation and description of the ordinary marks and scars, which have quite as much descriptive value and which have the advantage over the others of being much less alterable.

We will remark here that to indicate the exact position of a peculiar mark, one datum point will not be sufficient, unless the mark to be described be on that very spot. Thus a mark noted in these terms: *scar at 8 centimetres from right teat*, might be situated at any point whatever in the circumference of an imaginary circle described around the nipple with a radius of 8 centimetres. The formula: *at 8 centimetres above right teat*, is already more exact, the word *above* eliminating more than the lower half of the said circumference. But the exact point is rigorously determined only by the aid of a second point of departure: *at 8 centimetres above right teat and at 7 from median line*; or again: *at 8 centimetres above right teat and at 13 under sternal fork*.

The same observation may be made for the region of the back, the neck, etc. Nevertheless, for cuts on the hands and limbs, and for certain scars on the face, the indication of a single fixed point is generally sufficient, especially when the words *above*, *under*, *before* and *behind* can be used. That is a question of expediency left to the discernment of the observer, who should take as a guide the numerous examples that we shall have occasion to give in the course of this work.

In fact, three or four marks well described and varying in their origin and location would amply suffice to put the future identification of a subject beyond all question, if the *comparison* of the peculiarities previously described with those presented at the present time could everywhere and always be made with the subject under one's eyes. That is, unfortunately, only exceptionally the case, every examination of the central collection demanded by courts in other places having, of necessity, to be made at a distance from the subject whose record is sought.

A mode of procedure which arbitrarily limited the choice to the three or four principal marks would be liable to lead to many disappointments. The number of marks always increasing from birth until death, some among them which were rightly considered as important during childhood might in this method be subse-

quently omitted, as a result of the acquisition during life of still more remarkable peculiarities. So it is recommended to endeavor as far as possible to note all the scars, even when it considerably exceeds the number which is strictly indispensable. This is the only means which can put beyond all doubt the identification of the signalment with an old one yet to be found which will have to be compared with it at a distance from the subject.

And yet in the case of certain individuals too abundantly supplied with marks it becomes necessary in practice to limit the choice to the 12 or 15 principal ones. Thus, whatever may be the care taken, a statement of this kind is never absolutely complete. Herein lies one of the lines of defense most frequently resorted to in the courts by accused persons who seek to deny some previous conviction incurred under another name. *They claim that such and such a scar or birth-mark would have inevitably figured in the first signalment, if the latter really referred to themselves.*

Omissions of this kind should generally be attributed, either to the slight outward appearance of the *mark*, or to its situation almost out of sight or hidden by the trousers (which are not usually to be taken off), or lastly to the date of its origin, manifestly recent and consequently later than that of the taking of the first signalment. We will go so far as to say that the omission of a mark, even when it is quite apparent and of ancient date, ought not to invalidate an identification the legitimacy of which is otherwise abundantly proven by the other peculiar marks and the correspondence of the anthropometrical and descriptive signalments.

The inverse case is more serious and should render us more circumspect: *a certain mark accurately described in the old signalment is no longer found on the subject under examination.* Although one might, if necessary, suppose one confusion between the words right and left, or one error in the transcription of the note, or the misinterpretation of some temporary accident, such as an *eruption*, a *fresh bruise*, etc., which has the false appearance of a permanent scar, no more than one could be tolerated; at the *second* and *a fortiori* at the *third* mark which is not found the identity should be declared impossible.

Conclusion: all the marks indicated on an old signalment ought to be able to be recognized on the subject, if this signalment really applies to him; but

it is not necessary, inversely, that all the marks on the present subject should appear, without omission, on the old statement.

The importance attributed to the comparison of scars in all questions of identification shows the considerable practical interest which there would be, from the point of view of rapidity of observation, in arranging them always in the same order. The serial numbers (roman numerals from I to VI of the signaletic card) provide for this by separating the description of peculiar marks into six distinct classes, each corresponding to one part of the body examined, to wit: I, on the *left* upper limb; II, on the *right* upper limb; III, on the face and the front of the neck; IV, on the chest; V, on the back; and VI, on the other parts (lower part of the trunk and the lower limbs).

The use of the serial numbers, by establishing a clear separation between the statement for the right upper limb and that for the left, prevents, at the same time, the confusions so detrimental, and yet so easy to make, between the two lateral faces. Nevertheless, by way of an extra precaution, it is requisite to conclude every localization of a mark on one of the limbs by the word *right* or *left*, which will thus corroborate the indications of the serial numbers I and II.

As a general rule the examiner should endeavor to proceed from above to below in the case of the upper limbs, first the arm and forearm and then the hand, and to finish the observation of the anterior face of each of those parts before beginning on the posterior. But whatever may be the care taken in the carrying out of these directions the observer will be constantly forced to invert the order, either because some mark runs across a dividing line, or because it is not noticed by the observer until too late to be inserted in its proper turn.

Any divergence between the terms employed in succeeding examinations for the description or the localization of the same mark may sometimes occasion a little embarrassment. A certain *naevus* or mole (popularly termed a beauty-spot), for instance, situated approximately in the middle of the arm, will be localized at one time: *at 10 centimetres under cubital articulation*, and at another time: *at 13 centimetres above wrist*. A scar noted the first time as having an oblique direction, will be sometimes qualified as *vertical* at a later examination. In short, here, as in the

two other kinds of signalment, the operator should familiarize himself with the *degree of divergence* of which each term is susceptible.

A special chapter of the *Instructions* is devoted to the analysis of the abbreviations to be employed in recording the peculiar marks. The words used in the sentence on scars being limited in number and always succeeding each other in the same order, it becomes possible to represent them in writing by means of abbreviations reduced for the most part to the initial of the word, or even by means of conventional signs. Thus, for example, the word *scar* (technically *cicatrix*) is represented by the letters *cic.*, and the word *oblique* by a simple *b*; *c* signifies *curved*, and the letter *r*, *rectilinear*; *a* is read *anterior*, and *p* (the Greek *rho*), *posterior*; *e*, *external*, and *i*, *internal*; *d* (for *droit*), *right*, and *g* (for *gauche*), *left*; *f* is read *phalanx*; each finger of the hand is indicated by its initial in a capital letter, etc.

Let us suppose a mark noted in this manner: *cicatrix, rectilinear, of a dimension of one centimetre, oblique external, on middle of second phalanx of middle finger, left side, posterior face*; it will be reduced into the following line:

cic. r. of 1b e, ml. 2^d f. M. g. p

It can be seen that the daily use of these stenographic signs gives to the writing a rapidity equal and even superior to that of speech. The officers who make use of it even go so far as to say that it can be read more quickly and comprehended more easily than ordinary writing. An apprenticeship of some days is sufficient for the attainment of the maximum of speed, which is easily explained by the fact that the reflex movements between the word and the writing, so hard to establish that it takes several years of schooling to acquire them, are preserved here [*perfectly* in the case of French-speaking operators, and *in large measure* in the case of English-speaking ones], thanks to the initial letters, in place of being destroyed and replaced by others as in the methods of ordinary stenography.

We would add that, all the initials employed being, with a few exceptions, common to Latin and English as well as to French, these signs have an international value in some degree ideographical.

If we now turn our attention to the order of the words in a type phrase, as for example, *cicatrix rectilinear of 6 oblique internal at 9 above wrist left posterior*, we shall notice that our description progresses from the particular to the general. It commences by stating the *species* of the mark, before defining its *aspect* and *dimensions*; then, taking a more extended view, it embraces the *direction* of its form as regards the body as a whole, and ends by the indication of its *position*.

The words of the description thus follow, in a way, the operations of our mind, which commences by discovering the existence of the mark before analyzing its signaletic characteristics. The indication of the direction, *oblique internal*, has been intentionally interpolated between the figure of dimension, 6, and that of the localization, 9, to prevent confusion between the two numerical values.

This progressive order, very good for dictation, would be advantageously reversed, however, in performing the *inverse* operation, which consists in finding, again upon the subject the various marks indicated by a previous signalment.

To stick to our sentence, it is evident that before perceiving the *rectilinear scar of 6 centimetres oblique internal* and being able to compare the object referred to with the words of the description, we must have been instructed to look on the *posterior face of the left forearm* at a height of *9 centimetres* above the wrist.

Thus, the person who has to verify a signalment of this kind ought as far as possible to invert the order of reading, that is to say, to commence with the *localization* and finish with the *description*.

There will be found in the *Instructions* a synoptical table of the terms to be employed for the statement of every kind of mark. We will content ourselves here with reproducing from it the headings which constitute, so to speak, the *framework* of the cicatricial sentence. When our system was first put into practice, we tried to reproduce a table of this kind on the official model of the card in use by the Penitentiary Administration; but experience has shown us that, far from shortening the task of describing the peculiarities, it considerably lengthened it, by the necessity in which the secretary found himself of skipping continually from column to column, sometimes passing over one or more of them according to the

needs of the description. The use of abbreviated signs making it possible to keep up with the words of the observer, it would be idle to seek to attain greater speed.

We may add that it is recommended to recopy in ordinary handwriting such statements of peculiar marks as may be occasionally demanded by judicial or administrative authorities unacquainted with our conventional signs.

1. *Description of the mark*

a	b	c	d
Nature or designation	Shape and curve	Dimensions	General direction or inclination

2. *Localization of the mark*

e	f	g
Locative preposition	Enumeration of the parts of the body serving as fixed points, proceeding from above downward	Sides and faces (when the limbs are in question)

III

FINAL CONSIDERATIONS AND CONCLUSIONS

I. THE COMPARATIVE PLACE OF THE THREE KINDS OF SIGNALMENT

A comparison of the peculiar marks, when the first statement of them has been carefully made in conformity with the rigorous principles of description and localization which we have indicated in the preceding chapter, brings with it a certainty of identity much superior to that which results from a mere agreement of the anthropometrical observations.

The notation of individual signs might even completely replace measurement were it not for the inextricable difficulties which a classification based on these peculiarities would present.

What serial position can be assigned to each of them, when we consider that their number is continually increasing from birth until death, and that certain subjects are almost completely destitute of them, while others have such a multitude that it is almost impossible to notice them all?

So a signalment by means of peculiar marks will be a useful supplement to a description by osseous lengths, but it can never replace it. Anthropometry, which is a mechanism for elimination, chiefly demonstrates *non-identity*, while the direct *identity* is established by the peculiar marks, which alone can produce *judicial certitude*.

A criminal in a state of liberty commits a crime. It is the duty of the police to draw up his **descriptive signalment**, by means of all the observations which they can produce, that they may be able to recognize him amid the multitude of human beings and arrest him. As soon as a suspected person has been arrested, the **anthropometrical signalment** intervenes to establish his identity; to reconstitute the series of his old commitments if he is a *recidivist*; and, on the other hand, to assure him of every possible mitigation of the law if he is a *first offender*. Anthropometrical signalment makes it possible, and it is the only kind that does so, *being given a subject to find his name*. It goes back into the past and provides against the future.

It is, then, an exclusively penitentiary signalment, the virtue of which can be exercised only within prison walls. Outside, in a public square, for example, it is impossible to apply it as such; the most that can be done is to draw from it for the descriptive signalment some complementary indications, such as the total height, the height of the trunk, or the length of the foot or of the fingers when these dimensions are exceptionally small or large.

As for the **signalment** by means of **peculiarities**, its function is to place beyond all discussion the results obtained by the other two.

Cases are not rare where the three signalments thus play their part successively, while concurring towards the same end, *the execution of the penal law*: the descriptive signalment in the arrest; the anthropometrical signalment in the establishment of the antecedents; and the signalment by peculiarities in the confirmation of identity, whether this last intervenes immediately after (or even before) the arrest or only after an anthropometrical identification (1).

(1) The arrest of the notorious criminal, K——, alias R——, which was much talked about at the commencement of this year (1893), furnishes a striking example of the special role which falls to each of the three parts of our signalment. The skilfully directed political brigades of the Prefecture of Police having learned that the author of

It may be said, to borrow the language of the mathematicians, that the function of anthropometry is the reciprocal of that of description. In fact, here we have a signalment which it is necessary to match with one of the 100,000 free individuals of a city; there we have an individual arrested whom we must match with one of the 100,000 signalments of our files: *description designates the individual being given the name* (and the corresponding signalment); *anthropometry obtains the name, being given the individual.*

These results are confirmed by the signalment by peculiarities, either in the office of the examining magistrate or before the court; this is the *judicial signalment*, properly speaking. Thus the three portions of the signalment are seen to correspond to the three great divisions of repressive authority: public safety, prison administration, and judiciary.

We have insisted at some length on this point only because it even yet gives rise to misunderstandings.

How many times have we not heard prison officials declare that their signalment was the *descriptive*, and that in performing

the explosions of April, 1892, must have been a certain R——, who had already had a bone to pick with justice—notably in 1890 at Saint Etienne, where he was detained for eight days on a charge of uttering counterfeit coin, after which he was released on the ground of a lack of evidence of his guilt—the copy of his signalment card taken at that time was at once called for from the alphabetical files. It was found that it had been very accurately compiled by M. Moulin, then warden's registry-clerk of this town, who was on this ground afterwards named chief-warden. This signalment, immediately translated into popular language by orders of the examining magistrate, M. Atthalin, was communicated to the press. Now, the witnesses of the arrest, and particularly the waiter at the café where it took place, were unanimous in declaring at the examination and before the court of assizes that they had not decided to inform the commissary of police of the presence of this criminal in the place *until after having read in the Le Petit Journal the published signalment*, and after having assured themselves, without their customer's knowledge, that he really had on the front and back of his hand the scars mentioned. It is certain that they would not have gone so far if the statement of peculiarities had not intervened to transform their presumptions into certainty.

If, now, we investigate the circumstances which led to the first suspicions, we find that, according to the witnesses, it was, in this arrest, the extravagant language used by the anarchist which drew upon him the attention of the persons present. It was *this conversation*, then, which, in the present instance, played the part that falls theoretically to the descriptive signalment, which embraces the entire individual, both his physical and his moral characteristics, his bearing, his speech, his tastes and his passions.

Need we say to the "initiated" that, in the present state of things, owing to the imperfect character of the signalments usually put at the disposal of the professionals themselves, there is not a SINGLE genuine case of an arrest determined solely by the physical description of the subject. The only really active factors have hitherto been either the suspicious bearing and the awkwardness of the fugitive, or, still oftener, some very explicit anonymous denunciation.

anthropometry they would be doing the work of the police; while it is exactly the reverse which is the truth, as we believe we have demonstrated unanswerably.

On the other hand, not a year passes in the countries where anthropometrical organization is still under discussion that the newspapers do not publish some interview with eminent police officials who gravely declare that they do not see how anthropometry could be of any use in the arrest of fugitive criminals.

This is an opinion which we come very near to sharing. We would add, however, that in cities where anthropometry is operating well, the police are the first to profit by the identifications furnished through this channel. In Paris, particularly, they never fail to bring to the measuring room those who are considered great criminals, even before having them entered at the station.

Moreover, have we not demonstrated above that the adoption of the anthropometric method would bring about a concomitant reform in the methods of signaletic description used in prisons, and, what is more, that there the advantage which the police ought to draw from it (as soon as they have familiarized themselves with the method of using it) will be evident, and in the future will have still more important consequences.

Thus, while insisting upon the penitentiary character of anthropometrical signalment, we have been in no wise astonished to see the police of large capitals like St. Petersburg, Chicago, Buenos Ayres and Geneva take the initiative in the organization of an anthropometrical service analogous to that of Paris.

II. ORGANIZATION OF THE IDENTIFICATION SERVICE AT PARIS

At the Prefecture of Police in Paris the signalments are taken and classified by special employees.

All the subjects entered at the station since the preceding day are submitted to the formality of identification.

Each individual signaletic card is duplicated at one writing.

The copy is immediately classified in the *anthropometrical* files, whose tripartite system of elimination we have already explained, while the original card is classified *alphabetically* according to the orthography (or more exactly the pronunciation) of the proper name as declared by the subject himself.

The card to be classified anthropometrically is one centimetre shorter than the alphabetical one, in order to obviate all confusion, and particularly to prevent the two twin cards from being classified through carelessness in the same cabinet.

The alphabetical classification is a necessary adjunct to the anthropometrical file, and this *double entry account* is absolutely indispensable.

The problem to be solved presents itself in practice under the two inverse aspects of which we have already had occasion to speak, to wit: (1) being given the osseous lengths of a recidivist, to find his name; this is the side which belongs to the anthropometrical file classified by measurements; and (2), being given the name of a subject previously measured, to find his description again; a very simple problem, to which alone the alphabetical collection is able to reply.

The last point of view, which theoretically is less interesting than the first, is, however, that which is much the most frequently presented in practice. We have spoken in the note on page 64 of the criminal R——, who, having previously had relations with the police, was able to be *rearrested* speedily, thanks to the peculiarities described on his old signaletic card. Now how, in the absence of the subject, could this old card have been found by means of the name only, had not the central service had beside the anthropometrical file a twin collection alphabetically classified according to proper names?

Another hypothesis: the anthropometrical service is accused, rightly or wrongly, of having failed to recognize a certain recidivist hiding himself under an assumed name, and there is furnished in proof of this what is believed to be his true legal name. The alphabetical classification will allow it to be determined, immediately and surely, whether the subject in question has really been measured at some previous time under the name which has now been found to belong to him; and if so the old signalment will be compared with the new, in order to discover the origin of the omission.

We shall show further on, with figures to support our statement, how rarely mistakes of this kind are met with.

But much the most frequent use of the alphabetical file is to make it unnecessary to remeasure and investigate anthropometrically, at each new arrest, the numerous recidivists who return under

their true name and who by themselves alone form more than half of the entries for each day. Most of them, knowing that their judicial antecedents are registered and classified, make no difficulty about admitting that they have already been measured, and immediately so inform the examining officials before whom they successively pass.

The alphabetical arrangement enabling the old signaletic card of this class of prisoners to be found immediately, it is sufficient, without taking the entire signalment over again, to ascertain that the present individual is really the one whom he declares himself to be. To do this, the arms of the caliper compass are set successively at the distances corresponding to the two cephalic diameters noted on the card, then the measurer assures himself that the two extremities can pass over the skull with the proper friction, and finally verifies the presence on the subject of two or three of the peculiar marks mentioned in the card.

As criminals often exchange names among themselves, these verifications are indispensable; but although so limited, they are quite sufficient for the identification.

The officer charged with this verification makes the the abbreviated note *idf.* (identified) on the back of the card, preceding it with the date of the operation, and signing the whole with the initial of his name.

When the person in question is a young man whose growth may have altered some of his measures, or an adult recidivist having thus far undergone only *one* previous arrest, but of whom it is so much the more important to preserve an incontestable signalment, as the state of recidivation presumes a future habitual criminal, the abbreviation *idf.* is replaced on the card by that of *vrf.* (verified), which signifies that beyond the ordinary identification a complete verification of the first signalment has been made. The old figures recognized as erroneous are cancelled and replaced by the new *without surcharge or erasure*. After those which have been found to be accurate a small sign (=) is written which witnesses that the verification has been made.

It goes without saying that, while the formality of simple identification is repeated at each arrest, the identification with complete verification takes place in the case of adults only at long intervals, ten years, for instance; minors, on the contrary, undergo it at each new imprisonment.

The series of these various mentions corresponding to successive arrests constitute for the recidivist a dishonorable record the final outcome of which will be deportation.

Example:

Signalment taken 30-7-1886 by Mr. Gros, keeper at Lyons.

3-4-87-*vrf.* R. (3rd day of 4th month, 1887, verification by officer K.)
 3-9-87-*idf.* P. (8th day of 9th month, 1887, identification by officer P.)
 3-2-89-*idf.* R. etc.
 12-3-90-*idf.* R. etc.
 20-3-90-deported.

It often happens that, when he falls under the application of this dreaded law, the recidivist, without daring to contest his present personality, denies his past identity, and repudiates the previous arrests and sentences which are attributed to him, seeking to put them on the back of a brother or cousin who has disappeared, or else of some unknown person resembling him exactly.

In such a case the officers who have ascertained anthropometrically each appearance at the station, and whose signatures appear on the card, are all appointed to bring these demonstrative documents before the court. The fact that the police courts are often called upon to pronounce the most severe penalties on the strength of documents of this kind, will justify to our readers the slightly technical explanations into which we have thought it necessary to enter.

The alphabetical file, then, contains for each individual a complete history of all his entries at the station, and the anthropometrical signalment that accompanies it is the clew which allows it to be immediately verified, if the copy of it is placed in its correct anthropometrical order.

III. WORKINGS OF THE SERVICE OF ANTHROPOMETRICAL SIGNALMENTS IN OTHER PARTS OF FRANCE

The organization of the services at Lyons and Marseilles, and probably very soon of Lille, Nancy, Nice, Toulouse and Bordeaux, is similar to that at Paris. Each subject, as soon as entered on the books, is measured and investigated, while his signalment, copied in duplicate, is classified in the archives of the prison: 1st, alphabetically; and, 2nd, anthropometrically. The only difference

is that in these cities each signalment is, besides the two preceding copies, recopied in duplicate, one copy on the alphabetical size of 161 by 142 millimetres, and the other on the anthropometrical size of 146 by 142 millimetres, both of which should be forwarded the same day to the central service at Paris.

In the other towns where no special file in anthropometrical order is kept, only two copies of each signalment notice are made, which are forwarded to Paris each day in the same way, while the original draft is classified alphabetically in the file of the house. It remains there to permit of finding and verifying the signalments of recidivists who return to the same prison under their right name, and recourse is had to the central records at Paris only for the *anthropometrical investigation* of subjects who apparently are concealing their antecedents under false names and whom it would be impossible to identify otherwise.

This organization meets all the requirements of the case sufficiently. Indeed, the experience gained at Lyons and Marseilles has shown how great is the service which the anthropometrical classification is calculated to render in those great centers near the frontiers where, in spite of the decrees of expulsion pronounced against them, international criminals do not cease to pour in. The only precaution which they take, and which anthropometry baffles, is to change their names, whence the obligation of maintaining in these cities special anthropometrical files, with a view to verifying on the spot the identity of subjects who are strangers in the locality.

In less important towns, where the fixed criminal population is individually known to the local authorities, the necessity for anthropometrical identification is more rarely felt, and the central records of Paris, which can, if necessary, be consulted by telegraph, amply suffice.

In fact, while the service of Paris looks up, *as its duty*, the greater part of the subjects arrested in Paris, it is absolutely impossible for it to do the same for the 200 or 300 signalment cards which are required to be sent in daily from other parts of France. It is absolutely necessary that attention should be drawn to a card by a concise note before it can become the subject of an inquiry. In ordinary cases, where there is question only of suspicions, more or less well grounded, conceived by the prison officials, it suffices, in order to have a signalment investigated anthropometrically, to write on it with the pen, in front of

the heading for the proper and given names, the words: **calling himself** ————. But for important cases (such as those which the prosecuting attorney of the city asks the prison management to have investigated), it is preferable to put the card in a special envelope, and enclose with it a brief report relating all the supplementary details that can be gathered regarding the subject, the circumstances of his arrest, the objects found in his possession, etc.

On the other hand, all the cards destined for the alphabetical file give rise to a preliminary investigation in this collection at the very time that they are inserted.

This is because this file contains also name-cards of red color for all the cases of expulsion, of prohibition of residence, of conviction by default, of desertion, of insubordination, of search by warrant, etc., which are reported to it by the authorities respectively competent. Thus the classification of the signalitic cards of all the individuals arrested, which are brought together in Paris day by day, should serve at the same time to inform the repressive powers of many infractions of law which otherwise would have passed unnoticed.

Is it not astonishing, that in our country, which is often reproached with an exaggerated red tape and centralization, no such institution existed until the present time. We could cite numerous examples of criminals wanted for very serious crimes or condemned for contumacy to enforced labor, who were arrested at a later date in other localities for vagrancy or stealing food, and restored to liberty after a few days in prison! We consider that the *central anthropometrical bureau*, by filling this gap, will render a considerable contribution to the public security, which will cost the tax-payers nothing, for it will be accomplished by the same employees and the same labor as that of anthropology properly so called. This is in a certain sense a question of the utilization of a residuum of manufacture.

IV. STATISTICS OF RESULTS OBTAINED AT PARIS AND IN OTHER PARTS OF FRANCE

The numerical insufficiency of the force has long prevented the identification service from producing all the results which the public has a right to expect from it, as far as the country at large is concerned.

This is, however, only a temporary delay, though a very regrettable one, and it will not be long before the plans set on foot by M. Lagarde, director of the Penitentiary Administration, and M. Boucher, deputy from the Vosges, will put an end to it.

"The services rendered by scientific identification and the anthropometry which is its basis, and those which it is calculated to render (when its organization has been completed) not only to the police, but to **PURE SCIENCE** (note 2, opposite page) demand its official recognition as a service of the state." (Extract from the report on the penitentiary service, by Mr. Henry Boucher, deputy from the Vosges, member of the committee on civil service appropriations, 1893.)

The following diagram represents the annual number of recidivists arrested in Paris under false names and *officially recognized by the special service*, since its creation in December, 1882 (1).

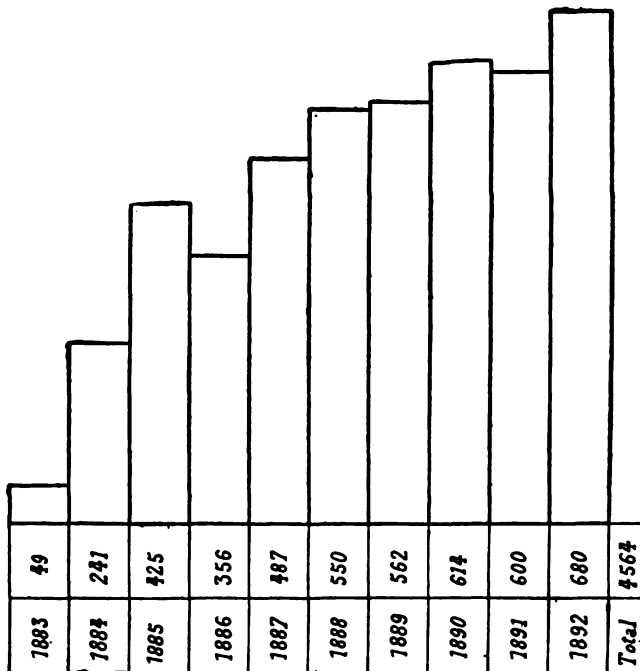


Fig. 21. Diagram showing the number of recognitions of recidivists under assumed names reported by the Anthropometrical Service at Paris, from 1883 to 1893.

(1) Under the prefectorate of Mr. Camescasse, with the co-operation of Messrs. Puilbaraud, Chief of his Cabinet, and Vel-Durand, General Secretary.

In publishing these results we do not forget the considerable importance which attaches to a *recognition*, whether it be considered from a social, or more particularly from a judicial or penal standpoint.

When a criminal determines to give an assumed name, it is because he believes it to be for his best interests and because he knows he is wanted in other places, or has reason to suppose that he is. So the recognition of a malefactor who conceals himself under an assumed name is, from the point of view of the general welfare, as serviceable as his direct arrest on the public highway.

Let us put aside the judicial interest and look at the matter from a strictly penal point of view. Do not the concealments of identity necessarily result in a considerable lengthening of the preventive detention? Supposing an average lengthening of 100 days for each individual under an assumed name, that makes, at the rate of 500 recognitions annually, an economy of 50 x 100, or fifty thousand days' keeping of the prisoners in question, or about fifty thousand francs [ten thousand dollars] of annual expense, at least, for the prisons of the Department of the Seine alone.

This view, which I expressed at the Prison Congress of Rome in 1885, before all the assembled penitentiary authorities of Europe, was unanimously accepted (3).

A still more remarkable consequence is, that the number of arrests of international thieves of the pickpocket class has been diminishing steadily from the creation of the identification service down to this day. It was the rule, indeed, among individuals of this class, to change their names at each successive arrest, and in this way they generally succeeded in escaping the increased penalties which fall upon the recidivist. Having become satisfied among themselves that it was no longer possible for them to conceal their

(2) That is an application of anthropometry which is very important and has hitherto scarcely attempted. Certainly we have endeavored to contribute to it, as far as circumstances permitted, both by personal labors, and by putting, as far as possible, the signal-etic archives at the service of students. But the methodical exploitation of this gigantic mass of documents still remains to be made. We should hasten to make use of them if we do not wish to be distanced in this field by the foreign countries which have adopted judicial anthropometry.

(3) In France, where the penitentiary rules deprive the recidivist *successively* of one-tenth of his wages at each new entry, the sure recognition of all recidivists leads in still another way to diminish the expenses of the state (see the report of Mr. Boucher before cited).

antecedents when arrested, and fearing on the other hand the law of deportation, they now prefer, by their own admission, to remain in foreign capitals: from 65 in 1885 their number fell to 52 in 1886, then to 34, to 19, and finally to 14 in 1890!

If we reflect on what it costs the inhabitants of a city to maintain such a population which lives absolutely by theft alone, we must conclude that the saving effected in this single particular surpasses the total cost of the anthropometrical service (1).

The lesser *recidivation* of foreigners compared with that of our countrymen is a result analogous to the preceding but with an economic bearing very much greater still. The monthly tables of municipal statistics relating to the identification service of the Prefecture of Police show that French criminals appear at the anthropometrical bureau in the proportion of *one* old to *one* new, while foreigners recidivate only in the proportion of *one* to *five*. Certainly it cannot be doubted that this lesser recidivation of foreigners is attributable to the law of expulsion of Dec. 3, 1849. However, these same statistical tables prove that it is necessary to examine on an average *fifteen* French recidivists to discover *one* who is concealing his identity under a false name, while the foreigners furnish *one* case of recognition to every *three* examinations. Thus the expulsive measures from which the country derives so much benefit can produce their full effect only where they are *always* and *everywhere* seconded by anthropometry.

There is a reflection which occurs spontaneously to the mind in the presence of these figures and of the success that they prove.

(1) "The fact has often been insisted upon, in recent times, that the *quality* of the punishment has much less weight than the certainty that this punishment will have to be undergone in all cases. The idea that a crime committed will *infallibly* be followed by a penalty is the most efficacious of all motives for not committing the crime. Anthropometrical measurements form a powerful element in this general prevention of crime by furnishing to the judge the means of identifying as a recidivist every individual who has ever been measured. This preventive, because intimidating, idea is best demonstrated by the fact that the delinquents who have been measured fear the danger of being recognized for ever after and that they avoid the countries where measuring is resorted to." (Stoss, professor of penal law in the University, in *Proceedings of the Meeting held at Berne, Dec. 19th, 1890*, for the consideration of the Bertillon System.)

The same idea was expressed by Dr. Manouvrier in the meeting of the Anthropological Society held Dec. 11, 1890, that is to say, precisely eight days before the anthropometric conference at Berne: "And if it be true, as it is lawful to believe, that the fear of retribution is a motive capable of often counterbalancing criminal desires, public morality will have been more benefited by the system of anthropometrical signalments than by the books of many professional moralists: *Initium sapientia, timor anthropometri*, one might say, by a slight modification of the text of the Psalmist."

"I do not doubt," you say, "that anthropometrical examination may cause the recognition of a certain number of criminals. But how many succeed, just as they did before, in passing through these nets! Here is the *number of your successes*; but what is there to prove that it is not surpassed by *that of your failures*?"

Official documents permit a peremptory reply to this question.

An error in these matters must present one of two aspects: 1st, a *false* or wrongly-made *identification*; (2), a *failure to identify*, of which we have already spoken.

A *false identification* would consist in matching two signalments which did not refer to the same person; in declaring, for example, that Durand, here present, is the same person as Martin, arrested and measured five years ago, while in reality they are two different individuals. I do not hesitate to affirm in the most categorical manner that anthropometrical signalment, combined with the descriptive and the statement of peculiar marks, completely protects us from such mistakes.

Thanks to the absolute independence of these three recognitory elements, the identity of an individual may be recognized with absolute certainty after an interval of a great number of years, to such a point that the employees of the anthropometrical service, when they discover the true name of a criminal hiding himself under an assumed one, have orders to avoid making known to him the result of their search. They are instructed to directly notify the proper magistrates, who are thus apprised of the true identity of the individual before them, without the latter's knowledge. Out of 5,000 recognitions hitherto transmitted *silently*, as it were, *not one has given rise to any confusion*, though if there had been such it would have been immediately made known by the objections of the party interested before the examining magistrate.

We do not mean to say by this that the recognized recidivists do not often try to repudiate the names shown to be theirs by anthropometry; they protest sometimes for months; but INVARIABLY, TO THIS DAY, THE ACCURACY OF THE ANTHROPOMETRICAL IDENTIFICATIONS HAS BEEN CONFIRMED BY THE SUBSEQUENT DECISIONS OF THE COURTS.

The *failures to identify* belong to quite another order of facts: Out of the 100 individuals arrested during the preceding twenty-four hours, who each day pass through the anthropometrical rooms, what is the number of those who fail to be discovered

immediately by their signalment, but who are subsequently recognized either by the aid of the old methods or as a result of fortuitous circumstances? No point is more interesting to elucidate in judging of the efficacy of the new method.

The official statistics of the city of Paris furnish us in this particular also with a reply of indisputable accuracy.

In fact, the Prefectoral Administration decided, at the same time that it adopted the anthropometrical signalment, that a premium of ten francs [about \$2.00] should be allowed to any police officer or prison keeper in Paris who would report to the authorities a *failure to identity*, and that the sum in question should be deducted from the salaries of the anthropometrical agents. The latter are then pecuniarily interested in the careful application of the system, since any negligence on their part is punishable by a relatively heavy fine.

Every *mistake* thus transforming itself into a *money consideration* is certain to be recorded. The concealment of a *failure* becomes administratively impossible. Now, the annual statistics of 1889 show that out of a total of 30,000 subjects examined during the year the number of omissions reached a figure no higher than four (1)! One could not ask for better results.

The probability of being recognized after having been once measured is equivalent, then, to certainty, so far as it is possible to approach that ideal.

The results obtained at Lyons and Marseilles appear quite as satisfactory, although not corroborated by such complete statistics. It can be stated that wherever the trial of our method has been seriously attempted it has been entirely successful.

V. ADVICE TO OFFICIALS DESIRING TO HAVE THE ANTHROPOMETRICAL FILES CONSULTED

The first of the conditions to be fulfilled in order that an anthropometrical investigation may lead to recognition, is that

(1) In 1890 we again meet with this same figure of *four*, which rises to *six* in 1891, and falls to *zero* in 1892.

When the primary cause of these failures to recognize is looked up, it is found that even here it is never the system which is at fault, but rather the human weakness which has neglected, some Monday morning, for example, to complete the insufficient searches of the day before, or which has made a gross blunder either in dictation or in writing down a figure, etc.

Whenever there is a clerical omission, it is evident that it can only spring from one of the four following causes: an error in the taking or the classification of the old signalment, or, on the contrary, an error in the taking or the investigation of the new one.

the signalment sent in should be **EXACT**, that is to say, taken in strict conformity with the instructions of the manual, without carelessness either in the reading, or in the copying, etc.

Every new anthropometrical agent should have his work verified for a while in this respect.

Following are the instructions that the Attorney General of the Court of Paris addressed on this subject to the magistrates of this department in a circular dated June 29, 1887 :

The ministerial circular of February 23, 1887, in calling attention to the immoderate use that certain public prosecutors make of photography for arriving at the identification of prisoners, pointed out a surer and less costly process of identification employed at Paris, which is that of anthropometry.

The Keeper of the Seals informs me that this system has been put in operation in all the capitals of arrondissements.

I beg you, therefore, to be so kind as to place yourselves in relations with the administrative authority for the study with it of this new method, with a view to economising as much as possible in the expenses of photography and of examining committes.

A circular addressed by the Minister of the Interior to the directors of prisons, March 7, 1887, required the persons in charge of departmental prisons to make use of it, and every arrondissement prison has recently been provided with the necessary instruments for the taking of the anthropometrical signalment.

The central collection established at the Court House in Paris contains the exact description and the indication of the various osseous lengths of adult individuals; it has existed for four years and comprises about 60,000 signalments, most of them taken in Paris itself.

It will then be easy, whenever an individual seems to be hiding his identity, to ascertain whether he has not already undergone previous sentences by immediately calling for investigations which, according to experience thus far, should apparently give the most satisfactory results.

I recommend to you, the first time you have recourse to anthropometrical signalments, to carefully verify those that are furnished you and to satisfy yourselves that they have been accurately taken by the prison keepers. This verification can be advantageously made by taking care to send to the central collection, each time that occasion presents itself, the anthropometrical signalments of prisoners who have been confined in the prisons of the Seine or of Lyons in these last three years and declare that they have already been measured there.

The signalments of these individuals existing with every guarantee of accuracy will allow you to see whether the head-warden of your arrondissement has been careful in the taking of the anthropometrical signalment. Moreover, the penitentiary administration will not hesitate to turn to good account this means of verification, by addressing to its officers the instructions necessary to bring about an absolute concordance in this part of the service.

The difficulties which will present themselves, and the inaccuracies that you may discover at the beginning, ought not to alienate you from this method, which since its creation has in all questions of identity rendered to Paris incontestable services.

This circular rightly insists on the economy which the employment of anthropometry allows to be effected in the expenses of photography. However, we may remark that it will still be necessary to have recourse to the photographic portrait whenever there is room to suppose that the individual to be looked up in the files may have been previously examined at less than twenty

years of age. We have seen above that anthropometrical signalment acquires an absolute degree of certitude only in the case of subjects who have reached an age of from twenty to twenty-two years, and that the Prefecture of Police has a photograph annexed to the signalment of every minor who passes through the station.

The conclusion which flows from this is that it is indispensable to send in the photograph of minors or of subjects whom there is reason to suppose, from their apparent age, may have been examined at the station during that period of their life. Carrying back the date of the first definite working of the system to the beginning of the year 1888 (the date of the arrests of Bourgeois and Lepine), it is easy to see that every subject appearing to have been born after the year 1868, that is to say, who appears at this present time (1892) to be less than twenty-four years of age, ought to be either photographed, or examined in person by a special agent of the central service of Paris, if one wishes to be absolutely sure of the result.

From the circular of the Public Prosecutor of the court of Paris there springs another and final conclusion; it is that the perfect working and success of the anthropometrical method depends largely on the use that the district attorneys will know how to make of it. When the measuring officer of a prison has learned by experience that his signalments may at any time be the object of a demand for verification on the part of the district attorney, the pains that he will take in his work will increase in proportion to the interest which the judicial and administrative authorities take in it themselves.

VI. INTERNATIONALIZATION AND GENERAL DIFFUSION OF THE ANTHROPOMETRICAL METHOD

The countries which at the present time have officially adopted the system of anthropometrical identification are: the United States, Belgium, Switzerland, Russia, most of the Republics of South America, Tunis, British India, Roumania, etc.

The following are the terms in which the question of the internationalization of the anthropometrical signalment was presented at Berne by a foreigner, Dr. Guillaume, ex-director of the penitentiary at Neuchatel, General Secretary of the International Prison Association, in an assembly of the principal officials of the judiciary

and police of Switzerland, officially called together at the Casino in Berne, December 19, 1890, with a view to preparing for the application of judicial anthropometry in Switzerland (1).

It has been established that professional criminals avoid the countries where identification is made by means of anthropometry. At the time of the introduction of the Bertillon system into France, there was remarked a genuine emigration of recidivists, who betook themselves to Belgium. Now, Belgium having followed the example of France, it is to be expected that the crooks and thieves of these two countries will transfer their field of operations to the neighboring states. Switzerland could not remain behind; it is about to fulfill its international obligation of contributing in its turn to the repression of crime by adopting the Bertillon system.

The most essential thing is to obtain the anthropometrical description of tramps; for it is these who pass through the different cantons and very often change their name on arriving in a new district. It is especially among this class that the habitual delinquents are recruited; a fact which renders it urgent to be able to immediately establish their identity.

The gain would be immense. The questionable means now in use to discover the artifices of an individual suspected of giving an assumed name would disappear immediately with the introduction of the Bertillon system. Then it would no longer happen for the Penitentiary Administration to tolerate or even instigate the espionage of prisoners by their companions in misfortune, or for an attendant or a prisoner to simulate friendship for the suspected individual, in order to gain his confidence with the intention of abusing it afterwards.

It is only proper that the international associations of criminals should be combatted by international measures. In proportion as the territory is extended in which anthropometrical measuring is employed the data at the disposal of the authorities will be augmented, since it will be possible to communicate them from from one to the other.

May we not be right in seeing here the germ of the international organization of one branch of the service of public safety? It does not seem to me impossible that an international bureau of anthropometrical mensuration may some day be established, analogous to the international bureaus a certain number of which we already possess. Switzerland, which is the international country by excellence, should not remain behind in this respect.

If from Switzerland we pass to Belgium, we find that the same ideas have been as brilliantly developed there by Mr. Ed. de Ryckère, assistant public prosecutor at Bruges, who has lately published a study on the identification of criminals in the *Journal*

(1) Extract from the minutes of the Council of State of the Republic and Canton of Geneva, June 10, 1891—Decree of organization:

"THE COUNCIL OF STATE on the proposition of the Department of Justice and Police
Decrees:

Article I. There is hereby created a service for the identification of prisoners, by the anthropometric system.

Article II. All persons arrested, as soon as the warrant has been issued by the magistrate, shall, before the expiration of said warrant, be taken to the place designated for measuring (No. 42, Court House).

Article III. Every prisoner is obliged to submit to the measuring under pain of being considered guilty of resistance to authority.

Article IV. The Department of Justice and Police is ordered to take the necessary measures for the execution of the present decree, which will become in force immediately.

Certified a true copy:

The Chancellor."

des Tribunaux of Brussels. This very complete paper has since been reproduced in its entirety in the *Journal des Parquets* of Paris.

His conclusions will be ours:

The internationalization of the method of anthropometrical signalments, that is the important reform that the interests of all civilized countries demand should be realized without delay.

The international exchange of judicial records which forms the order of the day in the Prison Congresses, constitutes, without doubt, a sensible advance on the existing situation. This innovation permits of the verification to a certain extent of the declarations of identity made by foreign criminals or those who claim to be so. Nevertheless, it would be dangerous to delude ourselves regarding the value and efficacy of this method of verification so long as it is not completed by anthropometry. The ordinary description appended to the documents in question scarcely facilitates the recognition of identity: a round chin, an oval face, grey eyes, etc., have never led to the recognition of a criminal outside the domain of romance. At the Prison Congress of Rome, in 1885, the desire was expressed of seeing the system of anthropometrical signalment extended to the other countries.

That is an important and indisputable improvement, of which advantage may be taken easily and without great expense. The immense utility of Mr. Bertillon's system could no longer be contested. The period of preliminary efforts and tests has gone by; the results of the experiment made in France are absolutely decisive; it is a complete and undeniable success. Every progressive and wide-awake man will applaud the introduction into our country of the scientific method of Mr. Alphonse Bertillon.

It must not be forgotten that it has a broader object than the mere recognition of the identity of *criminals* who conceal their true name.

The authentication of the physical personality and of the undeniable identity of individuals arrived at adult age corresponds, in modern society, to the most real needs, to the most varied uses.

Whether there be question of giving, for instance, to the inhabitants of a country, to the soldiers of an army, or to travelers going to distant lands, identification cards, permitting it to be determined and proven at any time who they are; whether there be question of completing by sure indications the acts of civil life, to prevent all error and all substitution of persons; or whether of recording these distinctive marks of the individual in the documents, deeds and contracts where his personality ought to be established in his own interest, in the interest of third parties, or in the interest of the state: the method of anthropometrical signalment will still have its place.

When a certificate of life, a life insurance policy, or occasionally a certificate of death, is to be drawn up, when it is necessary to prove, to certify, the identity of some person insane, or grievously wounded, or disfigured, whose body has been partly destroyed, or has become unrecognizable or difficult of recognition, in case of sudden or violent death, the result of a crime, of an accident, of a shipwreck, of a combat; how serviceable it will be to be able to trace those characters that are invariable in each individual, infinitely variable from one individual to another, and indelible at least in part even in death!

In a word, to fix the human personality, to give to each human being an identity, a positive, lasting and invariable individuality, always recognizable and easily demonstrable, such seems to be the broadest aim of this new method.

The range of the problem, like the importance of its solution, passes far beyond the limits of prison work and the interest, great as it is, of the penal action to be exercised in the various nations.

There is here a whole prolific source of ingenious reforms and useful improvements to be introduced in different directions. What numerous examples might be cited! There are in the social life of individuals numerous circumstances in which their identity is at stake. The general application of the system of anthropometrical signalments and its extension into all the domains of social life would render practically impossible such lawsuits as that of the *claimant* Arthur Orton, the pretended viscount Roger Tichborne. The comparison of their respective measurements would have quickly revealed the imposture.

The Hoyos-Baron affair, which ended in the execution of Hoyos in the public square of Beauvais, is not yet forgotten. Hoyos insured his life for a very large sum, and, with a view to securing the insurance, killed his servant, Baron, dressed him in his own clothes,

containing identifying papers, and threw him on the tracks of a railroad in order to make it appear as an accident. The fraud was very nearly successful; it would have been impossible to attempt, if the life insurance policy had contained the anthropometrical signalment of the person insured. The Hoyos-Baron affair is not an isolated case of an attempt at substitution of persons. The life insurance companies could say much on this subject.

The system of anthropometrical signalments is calculated to render immense services. It is necessary before everything to popularize it. In this direction lies progress (1)

(1) These views have since been taken up again and presented by Mr. de Rychère himself before the Third Congress of Criminal Anthropology, held at Brussels last summer. On his motion this assembly expressed a unanimous desire to see all countries adopt the anthropometrical system of identification and extend it to the whole population.



INSTRUCTIONS FOR SIGNALMENT

PRELIMINARY CHAPTER.—GENERAL DIRECTIONS FOR THE PRACTICE OF ANTHROPOMETRICAL SIGNALMENT

SUMMARY: I. Advice on the manner of studying the *Instructions for Signalment* and learning how to measure; II. Choice of a place; III. The measuring furniture; IV. Arrangement and use of the non-metallic instruments and accessories of measurement; V. Use, reading and care of the metallic instruments; VI. The duties of a secretary; VII. Manner of announcing the figures of the graduation; VIII. Manner of replying to the sociological headings, and those of place and date, on the signaletic card.

I

ADVICE ON THE MANNER OF STUDYING THE INSTRUCTIONS FOR SIGNALMENT AND LEARNING HOW TO MEASURE

1. The most minute recommendations given in the following pages should be followed in all their details; but it is not necessary to learn the text by heart. The pages of the *Introduction* excepted, this volume should be studied only with the instruments and a signaletic card within reach of the hand, constantly illustrating, paragraph by paragraph, the theory by the practice, and never omitting to have recourse to the *Album* whenever the text refers to the number of a plate.

2. In all that relates to the performance of anthropometrical operations, the apprentice in measuring should commence by reproducing each position described, placing his own hands above the corresponding figures in the *Album*. The directions should be read only after having reproduced the position represented. The function of the text will consist in commenting on each figure as it is produced, drawing attention to the delicate points.

After the first attempt of this kind it will be found that a movement which requires a description of ten lines may be executed in the most natural and easy manner in half a second.

3. These exercises should be performed by taking as a subject some willing prisoner, when it is not possible to replace him by an obliging colleague.

4. Then the numbers obtained *on the same individual at different sittings* should be compared, and these preparatory exercises should be continued until the differences observed never exceed the degree of **approximation** indicated in a special paragraph placed at the end of the chapter devoted to each observation. Four or five sittings of an hour each will generally be sufficient.

5. We cannot repeat too often how important it is for each operator to assure himself, by his own experience, that his errors, or rather his divergences in measuring and description, do not exceed, *could not in any particular exceed*, the limits allowed.

We have explained in the *Introduction* that upon the observance of this rule depends the utilization of the process, the possibility of recognizing, of *identifying*, two signalments. We have shown also that this theory of the limitation of the error might be applied to the descriptive characters, and even in some degree to the statement of peculiar marks.

6. A student measurer has really terminated his apprenticeship only when this conviction has penetrated his mind, and when he has tested it by exchanging a few signalments *for verification* with the central service at Paris.

7. To do this he ought to inquire whether, in the prison to which he is attached, there cannot be found some prisoner who has declared himself to have been measured previously at Paris, Lyons or Marseilles, or, in default of these cities, in any one of the localities known to be provided with good measurers. Subjects of this kind are valuable standards for verification, affording an opportunity which ought never to be neglected. The apprentice should himself take a signalment with as much care as possible and send it directly to the central service of Paris, the seat of which is in the Depot of the Prefecture of Police, accompanying it with an explanatory memorandum of this sort: "*Kindly inform me, for my personal instruction, of any discrepancies which there may be between the accompanying signalment, just taken by me, and*

that which was taken previously on the same subject at [name of place] about [approximate number of months or years] ago."

8. The reply of the central service will never be delayed. The errors and omissions pointed out will be so much the more instructive that the presence of the prisoner in the establishment permits of verifying an inaccuracy immediately, and consequently of correcting the method of operating with a view to arriving at the result transmitted. It is very seldom that after the fourth or fifth correspondence of this kind *the necessary and sufficient degree of concordance* is not attained.

II. CHOICE OF A PLACE

9. We shall see (p. 87, § 20) that it is indispensable for the measuring room to have a well lighted section of wall at least two metres in length for the measurement of the reach. It is equally necessary for the notation of the color of the eye that from the corner of the window where the subject should be placed for the observation of this organ there is to be a partial view of the sky.

10. Finally, it is desirable, from a hygienic point of view, that whenever the arrangements and size of the prison will allow it the prisoners to be examined should neither undress in or dress themselves in the measuring room, but in an adjoining antechamber.

11. As the process of anthropometry requires, for the avoidance of all delay, that the subjects should remain barefooted for ten minutes or so, it is recommended to choose, as far as possible, a room with a good floor, and furnished, if possible, with a covering of linoleum or oilcloth; it should also be capable of being easily warmed in winter.

III. THE MEASURING FURNITURE (PLATE I)

12. This furniture, which, for the most part, the prison directors can have made economically in their own establishment by penal manual labor, is composed of the boards H and B for the measuring of the *height* and the *trunk*, the stools E and T, which assist in the measuring of the *trunk* and the *foot*, and the trestle-table M, on which the *forearm* should be rested.

12. The employment of the boards H and B is optional. Their aim is less to serve as a support for the graduations on wood, which in many small prisons are placed directly on the wall, than to protect the latter against the injury caused by the repeated contact of subjects and the friction of the special square.

14. The *metre* and the *half-metre* are placed vertically on these boards, not in the middle of their width, but against their edge on the right side. In fact, it will be explained further on (measuring of the height and trunk) that the subject should be placed against the wall, with the spinal column about 15 centimetres to the left of the metre (see also fig. 1 of the frontispiece).

15. The *stool for the trunk*, E, should be fixed to the wall. It is made of very small size, in order to force the subject to seat himself firmly, in a precise manner. The dimensions indicated in plate 1 are therefore obligatory. Any change, particularly in the height of the stool, which is fixed at about 0^m 40, might lead to discrepancies in the result of the measuring, by modifying the relative position of the thighs and pelvis.

16. The *movable stool for the foot* (T) has the form of a section of a quadrangular pyramid. The spreading of its base thus affords a firm support to the subject, who should mount thereon with one leg only (fig. 7 of the frontispiece).

To facilitate the execution of this movement, the square board on top should bear the impression of a left foot outlined in red paint.

This stool also serves as a seat for the subject during the measuring of the diameters of the head and the ear (figs. 4, 5 and 6 of the frontispiece).

17. The recent introduction of the *trestle-shaped table*, M, 1^m 10 in height, has had the important consequence of diminishing by more than half the extent of the errors with which the measuring of the forearm was previously affected at the time when a table of ordinary height was used.

A handle, P, fastened on the upper cross-piece, offers a means of support to the subject during the measuring of the foot (fig. 7 of the frontispiece). A shelf below serves as a place of deposit for the implements between two measurements. Underneath is a drawer in which they are placed after the close of the sitting.

By analogy with the arrangements indicated for the footstool, the exact placing of the forearm is indicated on the upper surface

of the table by means of a sketch in red paint along the edge that bears the handle, at an equal distance from the two ends of the table (see plate 29).

IV. ARRANGEMENT AND USE OF THE NON-METALLIC INSTRUMENTS AND ACCESSORIES OF MEASUREMENT

18. These instruments and accessory tools are six in number. They can be easily purchased, and, if necessary, can be made without having recourse to the special dealers in anthropometrical instruments. They are:—(1) *A sheet of paper*, ruled in squares (1) and graduated in centimetres beginning at 1 metre and running to 2 metres, for the measuring of the reach. (2) *A rigid wooden metre* of ironwood (hornbeam) about 1 centimetre thick by 3 centimetres wide, graduated in millimetres, from 1 metre to 2 metres, for the measuring of the height. (3) *A half metre* of the same kind, graduated from 0^m 70 to 1^m 20 for the measuring of the height of the trunk. (4) *A special square* made of wood, to aid in measuring the height and the trunk. (5) *A graduated double decimetre* of boxwood, with a handle, for the exact location of the peculiar marks and scars. (6) *A pair of scissors*, of steel, with very strong blades rounded at the ends, for cutting, if necessary, the nail of the great toe and of the middle and little fingers.

19. 1st, *A sheet of quadrille paper* (plate 1, fig. E). There are also to be found on sale, for the measuring of the reach, sheets of oil-cloth, the graduations and numbering of which, already printed, commence only at 1^m 30.

20. This sheet, whether it be of cloth or paper, should be fastened over a section of wall at least two metres in length by means of some tacks with large heads.

According to the size of the sheet used, the height of the UPPER edge of the horizontal graduation above the ground will vary from 1^m 50 to 1^m 65. It is rare, in fact, for the height of the shoulders, even in a man of great height, to exceed 1^m 50.

(1) There may be found at any stationer's (especially at Lepage's publishing house in Paris) sheets of paper one metre long, ruled by millimetres in blue squares. The lines which separate the centimetres are a little heavier, and those representing the decimetres are still more accentuated.

A sheet of this kind numbered by hand, or still better by means of a stencil, answers the purpose perfectly. To make the centimetre rulings more visible, cover them with a fine black line, which should be made twice as heavy at every fifth centimetre. A heavy line bordered by two light ones should separate the tens of centimetres.

21. The most important point is for the horizontal distance between the extremity of the section of wall (limited by the corner of the room or by a special projection) and the first line of the vertical graduation to be precisely equal to the figure written, that is to say, in our specimen (plate 1), to the length of 1 metre (1^m 30 in the case of the pattern on oil-cloth).

22. The graduation *on paper* after being fixed at the desired distance, and EXACTLY VERTICALLY, must be protected against injury, and especially from soiling, by a thick pane of glass of the same dimensions, while that *on oil-cloth*, which can be cleansed with soap and water, may be used bare.

23. 2nd, *Entire metre in wood* (plate 1, fig. H). The metre for the height is placed at the same time 1 metre (measured vertically) above the ground and 1 metre (measured horizontally) from the starting-point of the graduation for the reach (indicated by the special projection), with its outer edge contiguous to the graduation for the reach.

We would say, in passing, that this last direction, which however is not obligatory, presents the advantage, for scientific investigations, of permitting the measuring of the reach even when in children it is less than 1 metre. It suffices for this purpose to take as a starting-point the projection of the edge of the metre contiguous to the graduation for the reach, instead of the original projection.

24. 3rd, *Half-metre* (plate 1, fig. B). The half-metre, specially graduated from 0^m 70 to 1^m 20 for the measuring of the height of the trunk, is placed according to the same principles, the first line of the graduation at 0^m 70 above the special stool of which we have already spoken.

25. When the arrangement of the room will allow it, the half-metre scale may be used both as a graduation for the trunk and as the original projection for the measuring of the reach. This is the arrangement which has been followed in plate 1.

26. Before fastening in a permanent manner the three graduations for the reach, the height and the trunk in the positions just indicated, it should be ascertained that no mistake has been made in placing them, by measuring successively with these different rules one same rigid rod of known length, and comparing the results obtained.

Thus, for example, a broom-handle of from 1^m 20 to 1^m 50 in length (after the brush has been cut off, of course) may be measured, taking care to write down the figures as fast as they are found: 1st, by the aid of an ordinary metre; 2nd, by means of the rule for the height; and 3rd, with the rule for the reach, placing, for the latter purpose, the end of the broom-handle against the original projection which is the starting point of the graduation. If the rod, while measuring more than a metre, was still less than 1^m 20, it can be measured a fourth time by means of the rule for the trunk. But generally it will be necessary to use for this last verification a different rod of smaller size, as for instance a cane or umbrella-handle the length of which is about 0^m 90. This will then be measured: 1st, by the ordinary metre; 2nd, by the rule for the trunk; and 3rd, by the horizontal graduation for the reach, but this time placing its extremity against the edge of the metre for the height instead of against the original projection.

27. All the lengths, written down as soon as read, should be compared only when the series of measurements indicated above has been completely finished. They ought, for each rod employed, to be identical to within a millimetre. Small discrepancies of from one to two millimetres ascribable to the graduations can be easily corrected without displacing the screws and plugs by striking with a hammer on the end of the rule in the direction opposite the error.

28. But the great advantage of these verifications will be to force upon the attention the grave mistakes in reading which slip in so easily during the labor of installation, particularly as regards the rule for the reach. Thus it has happened in our anthropometrical practice to meet with sets of rules which seemed to have been set up with the greatest precision, but where, as the result of the confusion of a figure, the same rigid rod measured 1^m 45.8 with the rule for the height and only 1^m 35.8 with the horizontal rule for the reach; the millimetre was correct, the error affected only the figure for the tens of centimetres!

29. 4th, *Special square* (plate 1, fig. Q). This square has its lower front edge rounded at the corners in order to render its handling more easy, and to oblige the operator to use it only in the position in which it is represented in plate 1, to wit: with the side 20 x 25 vertical and that of 22 horizontal. So this last sur-

face is the only one which can be soiled by contact with the hair, and the only one, in consequence, which requires particular care for cleanliness.

30. 5th, *Decimetre scale*, and 6th, *Scissors*. There is nothing to be said about the double decimetre and the pair of scissors with round ends, except that their use is indispensable, that they must be included in every complete anthropometrical outfit, and that the operator should furnish himself with them at the beginning of each sitting and not wait until he needs them and then have to go and look for them in an adjoining room.

V. USE, READING AND CARE OF THE METALLIC INSTRUMENTS

These instruments are three in number.

31. (1) *A caliper compass* (plate 2), of nickel-plated iron, with an arc of a circle generally graduated from the twelfth to the twenty-second centimetre, for the measuring of cranial diametres. We will call it abbreviatively the *head caliper*.

32. (2) *A small caliper rule* (plate 3), graduated from 0 to 10 centimetres, called the *ear caliper*, for measuring the two diameters of that organ.

33. (3) *A large caliper rule* (plate 4), called the *foot caliper*, graduated from 0 to 60 centimetres, for measuring the foot, the middle and little fingers, and the forearm.

34. The analysis and designation of their various component parts may be learned by means of the plates referring to them, Nos. 2, 3 and 4.

Theoretically, it would have been possible to do without the head and ear calipers, and take the diameters of these organs by means of the large caliper rule. But this simplification would have been counterbalanced by a diminution in the precision of the results. Besides, reasons of propriety would forbid the measuring of the head and feet alternately with the same implements.

35. The starting-point of the graduation of these three compasses has not been placed, as it usually is, at the inner edge of the fixed branch, but has been intentionally set back by about half the thickness of the movable branch.

36. The branches of the instrument being closed, that is to say, applied one against the other, the first millimetre mark in

the graduation has been prolonged on to the movable branch, in the middle of the bevelled bolt. It is the line thus prolonged that we call the *index* or *zero-mark*.

37. So the reading of the indications of the instruments should be made opposite this mark. For example: the caliper represented in plate 2 has its branches about 14 centimetres 3 millimetres apart, and not 13 centimetres 3 millimetres, as one would be tempted to read at the first glance. In the same way the ear caliper in plate 3 has a separation of 5.3 and not of 2.7; and the foot caliper (plate 4) a separation of 10.4 and not of 6.6.

38. The index of each instrument when *closed* should then fall precisely on the prolongation of the first line of the graduation. That is a condition of good order that the anthropometrical operator should verify by a glance every morning before using the instruments.

39. As the millimetric graduation in the head caliper commences (in most of these compasses) only at the 12th centimetre, the real starting point in this one is indicated by an isolated line placed on the arc at some millimetres from the left branch.

40. Another means of verification, surer, but less rapid, and one which can serve at the same time as a preliminary exercise, consists in measuring accurately and successively one same rigid rod, rectangular and square at both ends, from 15 to 18 centimetres in length (as, for example, a small hard-wood or metal ruler, a new unsharpened pencil, etc.): 1st, by means of an ordinary instrument; 2nd, with the head caliper; 3rd, with the foot caliper.

41. These exercises should be repeated until the results given separately by each of the three instruments are identically the same, within a quarter of a millimetre. Generally it is with the caliper rule that the object will be most promptly and exactly obtained.

42. When once the length of this rod has been well established, in centimetres, millimetres and fractions of a millimetre, this should be noted on one of its surfaces, and it should be kept as a *standard* of verification. If, as the result of a fall, an injury, or long usage, it is feared that the instrument has become inaccurate, a new measurement of it will show whether it can be depended upon.

43. Of the three instruments, the caliper compass is the most fragile, and the one whose accuracy must be most frequently verified. It is advisable to have, for this purpose, a standard of verification with three degrees which will permit of verifying rapidly the correctness of the 13th, 17th and 21st centimetres, that is to say, of the beginning, the middle and the end of the graduation.

44. *Care of the calipers.* The nickel-plated arms of the head caliper may be prevented from rusting by rubbing them after each sitting with a rag slightly oiled.

45. The graduations on copper of the three instruments may be kept clean by rubbing with chamois skin. Polishing-stone should not be employed, as it is difficult to remove it entirely from the grooves and the threads, and its use would soon deface the graduations.

46. The springs of the slide of the *ear caliper* should be drawn so tight that it will move only under the pressure of the finger. On the contrary, the slide of the *foot caliper* should be kept so loose that if the graduated stem is placed in a vertical position, the slightest shake, coming to the aid of gravity, will cause the movable branch to descend. This condition is indispensable to the accuracy of the measurement of the foot (see p. 120, § 11). When it cannot be produced by means of a cleaning and oiling, the instrument should be entrusted to an adjuster that he may relax its interior springs by means of a mandrel.

47. To give the fullest degree of legibility to the marks and figures of graduation in new instruments, their hollows should be filled with melted black wax or with a layer of black metal-varnish. This operation needing to be repeated only at intervals of several years, emery paper No. 0 may be used to remove the excess of black matter which, overflowing the figures, might hamper the free movement of the slide.

VI. THE DUTIES OF A SECRETARY

48. The assistance of a secretary or clerk, by sparing the operator the necessity of laying down his instruments to take up the pen, and vice versa, shortens the anthropometrical process by more than half.

His assistance will, at the same time, very considerably diminish the number of mistakes, provided that he be required to read aloud each indication in a clear and intelligible voice as soon as he has written it down.

As soon as a clerk has acquired some experience, the checking off of the peculiar marks and scars becomes useless.

49. On his side the measurer will enunciate his figures and phrases in such a manner as to facilitate the work of his secretary. It is to be borne in mind that as the signaletic notices contain only the name of the officer who has drawn them up, it is he, the measurer, who ASSUMES AND OUGHT TO ASSUME the final responsibility for any mistakes that his secretary may make. When an inaccuracy is discovered, an excuse based on a mistake of the clerk can never be accepted.

50. So he will take care that the numbers called back are really those that he has dictated; and from time to time will assure himself by a furtive glance that his secretary does not let himself be led by the carelessness of habit to repeat mechanically the number heard and not yet written, but that he actually reads over the indications which he has just written.

VII. ON THE MANNER OF ANNOUNCING THE FIGURES OF THE GRADUATION

51. The metric unit employed for the measurements as well as for the peculiar marks is the centimetre.

52. The indication 1 metre, written opposite the headings for the height and the reach, and the sign 0 metre, which appears opposite the trunk, are never called out. In the very rare cases where the height or the reach exceeds two metres, these figures should be written over and replaced by a 2. In the same way the figure 1 takes the place of the 0 for the exceptional cases where the height of the trunk is greater than 1 metre.

53. The eight other figures relating to the measurement of the head, the ears and the members *are announced and written down* with more rapidity by omitting the sign 0 metres which, according to the rules of the metric system, ought to precede them all.

54. In the reading as well as in the writing of all these measures the number of the centimetres should be separated

from the number of the complementary millimetres. For example, a foot of 0^m 278 in length should be dictated thus: 27—8 (*twenty-seven, a pause, eight*) and should be written thus: 27.8, that is to say, with the interposition of a period (or comma) between the centimetres and the millimetres.

Experience has shown that the errors in reading were less numerous when it was made a point to call separately: 1st, the *centimetrical* figures appearing on the instrument and which one has only to read; and 2nd, the *millimetrical* figures, varying from 1 to 9, which must be counted by the eye; without seeking to combine these two values of a different order in one numerical mass of several hundred millimetres.

55. When the length found corresponds to an exact number of centimetres, without any millimetres following, one should never neglect to dictate and write after the centimetrical figure the sign 0 to represent the absent millimetre. The omission of this cipher would leave room for doubt as to whether an important millimetrical fraction had not been omitted.

Example: A height of 1^m 630 will be dictated *sixty-three—zero*.

56. One occasion of error, which however is easily avoided, may present itself in connection with centimetrical round numbers, that is to say, ones ending in a cipher, like 20, 30, 40, etc., themselves followed by one or several millimetres.

Example: if for a height of 1^m 603 the measurer contents himself with dictating 60—3, it is to be feared that the clerk may write 63. So, in the case of a centimetrical round number, the operator is recommended to accentuate the *pause*, which ordinarily separates the announcement of the millimetres from that of the centimetres, by interposing the word *comma*, and ending the whole with the word *millimetres*: consequently the height of 1^m 603 should be dictated: *sixty—comma—three millimetres* (1).

(1) [A simpler, shorter and equally reliable method of dictation is employed in this case at the Chicago Police Bureau of Identification, where the word *and* is announced between the figures for the centimetres and those for the millimetres, thus making it unnecessary to add the words *comma* and *millimetre*. By this method the height of 1 m. 603 mentioned in the text would be dictated *sixty and three*].

57. We would remark that the obligatoriness of the terminal cipher, prescribed in paragraph 55 in case of the absence of millimetres, should suffice in itself for the avoiding of this cause of error; for, supposing a measurer dictates 60—3 as 63, the lack of complementary millimetres following this last number should immediately put the clerk on his guard and oblige him to ask a repetition of the measure.

58. We have still to draw attention to a very frequent kind of error which has received the abridged appellation of *mistake in reading of 5 millimetres*, and which consists either in the FORGETTING or the WRONGFUL ADDITION of an interval of a half-centimetre.

Example: in the graduation represented below, the length

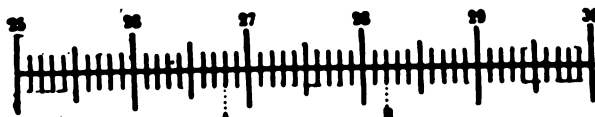


Fig. 22.

indicated by the letter A should be dictated 26—8; now it happens sometimes that heedless persons overlook the first five millimetres and read 26—3. Inversely, the length B runs a chance of being read 28—7 in place of 28—2.

The pointing out of the possibility of mistakes so gross should suffice to forever prevent their occurrence.

VIII. MANNER OF REPLYING TO THE SOCIOLOGICAL HEADINGS AND THOSE OF PLACE AND DATE ON THE SIGNALISTIC CARD

59. At the top, on the left, under *No.* —, are written the numbers of the entry and of the special file.

60. At the side, the *family name* is written in broad or otherwise distinctive characters of the height indicated by the dotted lines. The *given names* follow, in ordinary writing, as nearly as possible in the order in which they appear on the birth record.

61. The words *calling himself* [Fr. *se disant*], (1) written with a pen above the heading for the proper names and given names, show that there is reason to believe that the declarations of the prisoner are false and that he should be looked up in the central file at Paris.

62. There will be mentioned below, on the line for *nicknames* and *aliases*, the false names previously assumed by the recidivist and revealed by the central file, also the various nicknames (of prison or free life) which are sometimes called to play so important a part in judicial examinations.

63. It is intentionally that *the date* and *the place of birth* figure at the same time on the *recto* (front) and *verso* (back) of the cards. The use of customary abbreviations is permitted for the designation of states and provinces (or corresponding political divisions) with compound names.

64. We speak of *the apparent age* immediately after the date and place of birth that we may not depart from the order in which the headings come on the signalitic card, although it would be preferable to leave this point until the last, after having filled out the paragraph on *characteristic features*. The judgment that we form, requiring great caution, regarding the age of an individual, results principally in fact from the examination of the wrinkles of his face, his attitude, and his bearing, of which we shall speak at the end of the *Descriptive Information*, but which do not yield any very precise rules for the particular point that concerns us here.

When the apparent age differs to a noteworthy extent either from the declared age or from that which may be deduced from the records of his civil status, there should be entered opposite the heading the figure corresponding with the impression received.

An agreement or approximate agreement between the real (or declared age) and the apparent age of the subject is expressed by the arithmetical sign equals (=) placed after the heading. That is the most common case, the one that should appear on more

(1) All the directions, formulae or examples either to be called aloud or to be reproduced with the pen on the signalitic notices are distinguished from the general text of the present instructions by being printed in *bold-face italic type* while the bold-face roman characters are reserved for the very important directions a failure to observe which might entirely falsify the sought-for result.

than half the signalments taken. The minimum differences of two or three years are always useful to point out anywhere around the twentieth year, from the point of view [in France] of military obligations.

65. The headings of *filiation* are filled out in the usual way, and care should be taken to distinguish *legitimate* and *legitimated* from *illegitimate* and *adopted* children. A great number of fruitless searches in the birth registers are due to confusions of this kind. The absence of any indication on this point will always be interpreted as a sign of legitimate birth.

66. By *profession* we understand the ordinary occupation of the subject when he is at liberty, and not his work as a prisoner. *Without a profession* is written *s. p.* (sans profession). [or *no p.*].

67. The heading *last residence* is aimed, so far as possible, at the last fixed domicile, and not the lodging-house where the subject may have only passed the night preceding his arrest. The abbreviation *s. d.* signifies without fixed domicile.

68. *The papers of identity* which an individual carries should be noted only after a *personal* examination of them; and if, for one cause or another, the subject does not have them with him, indicate the reason, and say particularly whether the enumeration of them is made according to the statements of the subject or copied from an authentic document. The reply *without papers* is abbreviated to *s. pp.*

69. The *relations* include the names of reputable persons whose precise addresses the individual knows, and to whom he could appeal if necessary to establish his identity: parents, brothers, uncles or aunts, legitimate wife, children, old employers or patrons, school or hospital directors, or officers of any kind in the prison service, ecclesiastics, etc.

Whenever it is possible, the information under the two preceding headings should be completed by some such mention as this: "*well known in this locality, of which he is a native, or where he has lived for 3, 5, 7 or 10 years and where he was married, or better still, well known by keeper X——, under whose charge he formerly was at——*(name of prison) *in 18——*(approximate designation of the year), etc.

70. It is the *military services PERFORMED* which are intended by the heading relating to that subject, rather than the position in case of mobilization, which can always be easily deduced from the preceding data.

71. The number of *previous convictions* should be indicated, specifying the character of the most important. If this information is given from a copy of the judicial records, the word *records* (Fr. *casier*) should follow, placed in parenthesis. If at the time the card is made out no other means of information is available than the more or less unreliable assertions of the subject, there should be added the letters *decl.*, abbreviation for *declaration*. If the subject has never undergone a conviction before that to which he is now exposed (or which he has just incurred) he should be asked whether he has already undergone *arrest* or detention, followed by a non-suit or acquittal. The complete absence of judicial antecedents is not expressed on the card by the word *none*, but by means of the letters *n. a.* (never arrested, Fr. *jamais arrêté, j. a.*).

72. The line relating to the *place of the last previous detention* naturally needs to be filled out only in the case of a recidivist having already undergone an arrest prior to the present one.

73. It is not sufficient for the *specification of the offence leading to the present detention* to merely mention the unlawful act in the manner in which it is entered in the jail-book, but there should be indicated in a few words the characteristic species to which it belongs. Thus in simple larceny, a distinction should be made between the *theft of standing crops*, the *theft of articles exposed for sale*, *theft in large stores*, *theft from an office or till*, *hold-ups*, *pocket-picking*, etc. This latter crime, for example, being always the work of an old offender, one may be assured, *a priori*, that there is a concealment of identity, whenever an individual who has been guilty of it **DECLARES HIMSELF** to be without judicial antecedents. Thus the signalments in which the individual notice mentions the crime of *pocket-picking* or of *buncoing*, etc., are looked up very carefully in the central file: while those indicating *breach of trust*, *theft by a salaried employee*, etc., are not made the object of any special examination, except on particular advice.

As much might be said for the thousand different categories of outrage and offenses against modesty. Nothing can be more different, from the point of view of the signalitic externals of the individuality, than the old pederastic criminal, the vile debauchee who pursues children of one sex or the other, the drunkard who, in satisfying a call of nature, commits an indecent act more or less involuntary, and the more or less insane exhibitionist, etc.

74. The last line of the recto of the card is devoted to *the date and the indication of the place where the signalment has been taken*. The months may be noted in figures: 1st, 2nd, 3rd, etc., instead of January, February, March, etc. The *proper name of the keeper*, followed by the initials of his given name, has in view the measurer who has REALLY taken the signalment and not the functionary theoretically responsible. The central bureau of Paris keeps a list, indeed, of all the measurers in France by name, with a view to a surveillance of their ability and zeal. Their names, with the evidences of their anthropometrical knowledge, are registered in it as fast as the occasions for verification present themselves.

75. When the city where the signalments are taken contains several prisons, there should be added to the name of the city the name of the particular establishment in which the operation takes place. (On French cards *arr.*=station, *corr.*=jail or house of correction, and *central*=penitentiary.)

FIRST PART
ANTHROPOMETRICAL OBSERVATIONS

**CHAPTER I.—GENERAL MEASUREMENTS TO BE TAKEN BY
MEANS OF THE MURAL GRADUATIONS**

A. Height. B. Reach. C. Trunk.

SECTION A.—MEASUREMENT OF THE HEIGHT (plate 5)

First Stage

1. The subject being **barefooted** and having his back against the wall, at about fifteen centimetres from the rule on the side of the graduation, make him take a position similar to that of the soldier without arms, as it is defined in the *military tactics*; the heels together and touching the wall, the feet at a little less than a right angle, and turned in an equal degree outward, the knees stiff, the body straight, firm and erect, the shoulders back and even in height, the arms hanging naturally along the body, the neck stiff, **THE CHIN SLIGHTLY DRAWN IN**, and the eyes looking straight forward.

2. In the case of crook-backed persons, it often results from the position indicated that the back of the head no longer touches the *vertical upright* that bears the scale. It would be a mistake to make heads of this kind bend backwards until **IN CONTACT WITH THE GRADUATED WALL**. This might cause a diminution of more than a centimetre from the actual height.

3. As a general rule: **place the subject in such a manner as to make him assume his maximum height, making sure that his heels touch the ground.**

Second and Last Stage

4. When the subject has been correctly placed, press with right hand against his stomach to correct, if necessary, any excessive arching of the back; at the same time take in the left hand the special square with a double plane, place it at some centimetres above the head of the subject, with the side rounded at the corners downward, applying it at the same time against the wall and against the projecting edge of the metre (on the side of the graduation);

bring it down quickly till it touches the summit of the head, guiding it by the projection formed by the thickness of the metre, then, holding it in place by a firm pressure against the wall, read the figure of the graduation opposite the lower plane of the square.

5. The placing of the square against the measuring-board and its descent on the head of the subject are two movements which should be executed by the operator quickly and without hesitation, in order to surprise the individual measured before the latter has had time to modify the position taken at first.

6. If, in spite of all, some manoeuvre of shrinking is suspected, make the subject take a few steps across the room and then suddenly replace him under the scale and begin the operation over again.

7. The height is the most delicate of all the measurements of the system, and the one in which the subject can most easily cheat. The least negligence in obtaining the position described above may cause a difference of nearly a centimetre. The height of the same individual is often ten millimetres greater in the morning, *on getting out of bed*, than in the evening. Moreover, the body settles every year after twenty-five years of age, sometimes beginning even sooner. Now supposing all these errors to be accumulated in the same direction, it may be considered established that a subject of adult age, measured at an interval of several years, is likely to show a diminution in height which may amount to 2 and sometimes even to 3 centimetres, or an increase which may reach 1 centimetre.

8. In the dictation of the height, the indication 1 metre, which necessarily accompanies each height and is printed on the cards, is always understood, and the centimetres and millimetres are announced separately (see page 93, § 52).

9. Mention the centimetres exactly, and the millimetres approximately within a unit, without seeking an accuracy which this measure does not permit. Be careful, however, not to be led into giving round numbers: if, for example, the square indicates a measure intermediate between 1^m 59^{cm} 8^{mm} and 1^m 59^{cm} 9^{mm} do not indicate 1^m 60^{cm} 0^{mm}; in other words, read and dictate the figure of the graduation just as it is indicated, taking care not to modify it in any way.

Remarks on the Measuring of the Height

10. Below the line for the indication of the height there is noted the degree of *vaulting* or *curvature of the back*: 1, 2, 3 centimetres, or a dash when the position is correct, as is oftenest the case.

11. By this correction the operator seeks to diminish the lack of precision of the height. He marks 1 centimetre, when the individual is slightly crook-backed; 2, when the curvature is more accentuated; 3, when it is very pronounced. The figures 4 and 5 are seldom used; while 6, 7, etc., can be applied only to hump-backs.

12. The operator by practicing before a measuring-board, to observe the diminution in the height that he produces by bending his back more or less, will soon become able to determine with sufficient accuracy the value of these indications.

13. Thus the notation: height, 1^m 65.4—curvature 3, applies to a crook-backed man whose height is given by the rule as 1^m 65, but who, under other circumstances, in his youth or in good health, when he held himself erect, or WISHED to hold himself erect, would have measured 3 centimetres more, or 1^m 68 within a few millimetres.

The following example, on the contrary: height, 1^m 68.2—curvature—(the heading curvature being followed by a dash), applies to a man holding himself sufficiently erect who (if the other information agreed) might be the same one to whom the preceding example referred.

14. Thus the observation of the curvature is taken *by the eye*, without the aid either of the measuring-board or of the decimetre. It is always a centimetrical figure which is forwarded by way of indication to the employee whose duty it is to make the investigation in the central collection, to remind him that *the usual approximation* could not have been attained.

15. When there is room to suspect that the *vaulting* is produced voluntarily by fraudulent manœuvres of the subject, the letters *tr*, abbreviation for *trickery*, should be placed after the heading on the signaletic formula. The analogous attempts which have their seat in the loins and the small of the back are noted in the same manner.

16. **Approximation.** TAKING INTO ACCOUNT THE CORRECTIONS CARRIED TO THE HEADING CURVATURE, there is evidence of a mistake on the operator's part when the variation ABOVE OR BELOW the true figure reaches 7 millimetres, and of a grave mistake when the discrepancy exceeds 15 millimetres.

SECTION B.—MEASUREMENT OF THE REACH (plate 6)

17. The reach is the greatest length which the arms can attain when extended horizontally in the form of a cross. It is measured immediately after the height, almost without moving the subject.

First Stage

18. The subject remaining with his back against the wall is asked to *extend the arms in the form of a cross*. The operator, facing the graduation on the wall, keeps them in this position, causing the subject to move, if necessary, either to the right or left, far enough for the extremity of his middle finger to come into contact with the projection from which the horizontal scale is reckoned.

To do this it will generally be sufficient to say, indicating the projection: "*Please touch here,*" adding, as soon as the contact is obtained: "*Spread your legs a little; place yourself in an easy position.*"

This last direction is intended to correct the turning on the hips, which the subjects, wishing to do well, scarcely ever fail to execute in the attempt to touch the projection without spreading or moving their legs from the position previously taken for the measuring of the height.

Now the reach can be taken with exactness only when the subject, fixed quite perpendicularly upon his legs, has his shoulders HORIZONTAL.

Second and Last Stage

19. As soon as these conditions have been realized the operator, by a rapid glance from right to left, makes certain for a last time:

First, that the extremity of the right middle finger of his subject has not lost its contact with the projection; and, second, that from this extremity to that on the opposite side the joints of the wrists, arms and shoulders are on one same horizontal line; then, making sure of the immovability of the arms of his subject by a light pressure against the wall (see plate 6), he reads the indication of the graduation.

Remarks on the Measuring of the Reach

20. The divergences to which the measuring of the reach is liable should be compensated for, as far as possible, by the indication of the curvature or *vaulting* (Fr. *voute*) of the reach, interpreted in the same manner as for the height, and noted by the signs *v. 1*, *v. 2*, *v. 3*, etc., which are written on the signaletic card immediately after the results of the measuring.

This correction often has to be made in the case of persons who have had the joints of their arms stiffened by rheumatism, the rickets, etc.

In subjects of this kind it must be seen to that the wrists are kept as closely as possible against the graduated wall.

21. In accordance with the directions of paragraph 15 regarding the curvature of the back, whenever there is reason to suppose that the imperfect extension of the arms is due to some manœuvre on the part of the subject the sign *v.* is replaced by the letters *tr.* (trickery).

22. When a person insists that he is unable to open his arms to their full length, it is not the duty of the measurer to discover whether this inability really exists. He measures the greatest stretch of the arms just as it presents itself, even when, as a result of luxation or of the amputation of one of them, the entire reach is reduced to the length of a single arm added to the breadth of the shoulders. But he takes care to explain under the heading *NOTE* the true or supposed reason for so great a correction.

23. In general, every correction indicated by means of the letters *v.* or *tr.*, followed by a figure greater than two, should be made the subject of an explanatory note.

24. There is a well known correlation between the reach and the height: the reach is *ON AN AVERAGE* about 4 centimetres greater than the total height. Thus these two indications check each other. Whenever the reach dictated is inferior by some centimetres to the height or exceeds it by more than *ten* centimetres, it is probable that a mistake has been made in one or the other of these observations and they should *VOIR* be verified. If the same figures are obtained as at the first reading, a note is made of this verification by adding on the card after the

figure for the reach the letters *rv.* (measurement REVIEWED, verified, its accuracy guaranteed, however extraordinary it may appear). It is distinctly understood that this note implies the ~~measuring~~ not only of the reach but also of the height.

25. The letters *rv.* may appear, on the same grounds, after any other indication, numerical or descriptive, whenever it is extraordinary either by its comparative magnitude or smallness, so that it is found necessary to indicate by a conventional sign that it is not the result of an error in the measuring or recording.

26. **Approximation.** The reach is the only one of the anthropometrical observations that is read in centimetres without the addition of millimetres. The figure set down may therefore be on this account from 3 to 4 millimetres smaller than the length indicated by the horizontal rule, which is itself graduated only in centimetres. Beyond the half centimetre, the next even centimetre is dictated.

27. It would in fact be entirely useless to note the millimetres for a length in which the divergences in measurement (even after allowing for the corrective indications) may reach 1 centimetre above and 1 to 2 centimetres below the true figure without necessarily implying a mistake on the part of the measurer. Beyond these limits the mistake will be all the more inexcusable in proportion to its extent and to the lack of corrective indications (letters *v.*, *tr.*, or explanatory note) to put the reader on his guard.

SECTION C. MEASUREMENT OF THE TRUNK (plate 7)

First Stage

28. The subject being in his shirt sleeves, tell him to sit down on the footstool with buttocks against the wall. Make sure that this order has been strictly complied with by passing the hand down the lower part of the subject's back; ascertain *by a glance* that the legs are bent at right angles to the hips, the small of the back not too much arched, the shoulders equally sloping, and the head in its normal position.

Second and Last Stage

29. Bring down the special square in the same manner and with the same precautions as already prescribed for the measuring of the height; then dictate the number indicated.

Remarks on the Measuring of the Trunk

30. The observations regarding the degree of contraction of the back and on the possible kinds of deception are identical, whether in the case of the trunk, the height or the reach.

They will be recorded in the same way for the trunk by means of similar abbreviations relating to *vaulting* and *trickery*.

31. **Approximation.** This measurement frequently exhibits differences of more than 10 centimetres among different individuals of the same height. Unfortunately it can be taken with any sort of precision only on willing subjects. Whatever may be the causes of error, the divergence between the heights of the trunk measured on the same individual should not exceed one centimetre plus or minus, taking into consideration, of course, both the *corrections* already charged to the *vaulting* of the body, and those which may need to be especially annexed to the figures for the trunk.

CHAPTER II.—MEASUREMENTS TAKEN ON HEAD BY MEANS
OF CALIPER COMPASS AND SMALL
CALIPER RULE

A. Diameters of the head. B. Diameters of the ear.

SECTION A.—DIAMETERS OF THE HEAD

I. Measurement of the Length of Head
(antero-posterior diameter)

First Stage (plates 8 and 9)

1. Make the subject sit down on the movable footstool, his face turned toward the light but SLIGHTLY INCLINED towards the floor.

2. Stand at the left side of the subject, place the left point of the caliper compass in the depression at the root of the nose (1), holding the rounded extremity of the point between the thumb and fore-finger, which rest on the adjacent parts of the nose and prevent the point from deviating towards one of the two orbital cavities, which would entirely falsify the measurement.

3. At the same time take the other branch of the compass in the right hand and bring it towards the top and center of the head, allowing the extreme point to project barely one centimetre beyond the operator's fingertips, in such wise, however, that it can easily penetrate the hair.

4. The other fingers of the two hands, slightly bent, maintain the compass in an ALMOST HORIZONTAL position, so that the light from the window strikes full on the millimetrical graduation.

Things being in this situation :

5. Fix the eyes on the index-mark of the graduation; bring the right point of the compass down over the back and middle of the head until it has

(1) In anthropology the point most generally adopted for the taking of the antero-posterior diameter of the head is situated on the glabella (the space between the eyebrows) and not on the root of the nose: whence a marked difference exists between the *diameter* of the anthropologists and the *length of head* of our signalments.

reached and passed the most projecting point ; then move the point upward again, watching that it continues to touch the scalp ; pass over the maximum point again, feel around for a moment, keeping the eyes fixed on the graduation to make sure that it really is the maximum point, and then read the indication of the graduation.

6. Care should be taken during these manœuvres and those that are to follow that the subject does not contract his eyebrows; this is a rather frequent instinctive movement which, if not repressed, might unduly increase the sought-for dimension by a millimetre.

The maximum point is generally situated on the occipital protuberance, sometimes above it. However, it must not be forgotten that it is not the location of this point that is sought but rather the distance that separates it from the root of the nose.

Second Stage (plates 10 and 11)

7. The operator having ascertained the length of the head to within a millimetre, withdraws the compass and fixes it at the supposed length by means of the set-screw.

8. To perform this latter operation rapidly and without trembling :

Place the fingers as shown in plate 11, to-wit : the thumb of the left hand across the left branch and the graduated scale, while the other fingers extended reach easily the under side of the right branch. With the right thumb and right index finger bring the right branch of the compass to the millimetric point previously found, and turn the set-screw situated under the index-mark.

In this pointing the four extended fingers of the left hand serve as a support and prevent the oscillations which would take place if the right hand were acting alone.

9. **Be careful to set the compass at the point exactly opposite the index-mark, and not on one side at half a millimetre above or below.**

Third and Last Stage

10. Having set the compass at the desired distance, replace it on the root of the nose and begin again the up and down motion executed in the first stage (same figures as for the first stage, plates 8 and 9).

11. By these latter movements the operator verifies the accuracy of the measure obtained and ascertains, in oscillating hither and thither, whether any little bony bump situated to the right or the left of the median plane and capable of

modifying the length found has not escaped him the first time. If the point encounters any resistance in this manoeuvre the operator should widen the opening of the compass by 1 or 2 millimetres, handling the instrument as described for the second stage, and RECOMMENCE THE THIRD MOVEMENT.

If, on the contrary, the point nowhere touches, or if the friction in passing over the maximum point is almost imperceptible, he tries a degree of separation smaller by 1 or 2 millimetres.

It is seldom, after a few days practice, that the exact figure is not found after one or two trials.

12. Whatever may be the skill of the operator, this third stage, called "the control," must never be omitted.

For this verification, rely principally on the friction of the point of the compass on the scalp. The left point resting firm, that is to say entering well into the depression at the root of the nose, the right should TOUCH the skin of the head; but in passing over the maximum point there should not need to be the least pressure on the branches, which are unfortunately always flexible enough to bend a little. If such should be the case it would be a sure sign that the measure was too small by 1 or 2 millimetres.

13. WHEN THE COMPASS IS SET AT THE EXACT LENGTH, THE FRICTION IS SUCH THAT IT CEASES AT A SINGLE MILLIMETRE MORE AND BECOMES HARD AT A SINGLE MILLIMETRE LESS.

14. Furthermore, it happens sometimes, especially in the case of thin subjects, that the pointing seems too tight at a given millimetre and too loose at the millimetre following. This is because the actual length falls more or less exactly midway between two contiguous millimetres. The use of fractions of a millimetre being forbidden, the operator must dictate, under such circumstances, the figure which seems to him to be nearest the truth.

15. **Approximation.** From the preceding observations we must conclude that the measurement of the length of head can be taken to within HALF a millimetre, although the mention of the half millimetre is never made in it.

Except in the case where the TRUE indication falls almost exactly between two millimetrical graduations, it should be recog-

nized that there is beginning to be a error on the part of the operator when the discrepancy between two lengths of head measured on the same subject reaches 1 millimetre, and a grave mistake when this difference reaches 2 millimetres. The error, in this case, is the more inexcusable because for the head there is no room to allege a possible trickery on the part of the subject.

16. The difference of two millimetres generally results from a double error of 1 millimetre in opposite directions; the differences are added together, and the truth lies between the two.

17. The *doubling* of the error, which may happen in any of the measures of the signalment, shows with what care the operator who wishes to avoid errors of 2 millimetres should *attend to* the millimetres in the obtaining of every kind of length.

II. Measurement of the Width of Head (transverse diameter)

18. The maximum width of the head is taken with the same instrument as the length, and by a similar method.

First Stage (plates 12 and 13)

19. The subject being seated on the stool in the same position as for the measuring of the length, take a position exactly behind him, the heels together at right angles and the body erect, so as to allow equal freedom to both elbows. Hold the branches of the compass a short distance from the ends, and place the points at first on the upper attachment of each ear; then raise them vertically across the subject's scalp.

20. As has been said in the case of the length, the operator, his eyes fixed on the graduation, at first observes an increase of width, soon followed by an uninterrupted diminution in proportion as the points of the compass are raised symmetrically towards the top of the head. Descending again, the operator sees the movement of increase take place once more, followed by a diminution, and he tries, by feeling around, to find the position of the two opposite points, on the same level, at which the diminution commences.

21. These two points are not necessarily those of the maximum width; but they are generally situated very close to it on the same horizontal plane as the diameter sought. So the operator, having found this horizontal plane, has only to :

22. Make the arms of the compass oscillate slowly back and forth two or three times, in order to be able to stop at the maximum diameter and read the graduation.

23. Occasionally the two points with maximum interval are situated just at the upper attachment of the ears; but oftener they are found two fingers' width above and behind.

Second Stage (plate 14)

24. The second stage in the measuring of the width has the same object as the corresponding stage for the length—to fix the branches of the calipers at the figure found. The method of operating is likewise the same.

25. The left hand, letting go the point of the caliper, is withdrawn from the instrument for a moment and brought up towards the graduated scale; the thumb is placed across it, while the other four fingers are extended underneath to sustain and steady the opposite branch, which may then in its turn be relinquished by the right hand.

26. With this free hand turn the set-screw, after having brought the branches to the distance found in the first stage.

Third and Last Stage

27. The object of the third stage, as of the corresponding stage in the measuring of the length, is to make certain that the opening at which the compass has been fixed is neither too wide nor too narrow.

28. To this end, move the points of the compass symmetrically up and down, gradually advancing from 1 to 2 millimetres at each going and coming, until a point considerably forward of the two maximum protuberances has been reached (same general view as for the first stage, plate 12).

It is very important that, during the whole of this verification, the subject should be seated squarely and that, on the other hand, the operator should have his body erect, with his elbows free and evenly raised in order that the two points of the compass may advance quite symmetrically with the same movement.

30. The observations on the degree of friction which should be sought, and which it is possible to obtain, are the same as for the length (page 109, §§ 12 to 14).

31. Nevertheless a comparison of the directions for the third stage with those for the first shows that the oscillating movements for *verifying* the probable width are not identical with those for *determining* it at the first reading.

In **determining** the probable width, the caliper is first raised vertically, and then oscillated backwards and forwards horizontally; in **verification**, the points, starting from the commencement of the third movement, are advanced forwards and backwards, describing a series of zigzag lines 2 or 3 centimetres long and only a few millimetres apart (plate 15, fig. 1).

32. The protuberances which determine the maximum width are frequently, indeed, only slight projections with a surface smaller than that of a dime. Hence it results that if, in the oscillations for the control, the zigzag lines were too far apart, there would be danger of passing by the maximum projection without touching it (plate 15, fig. 2), and consequently of being led to diminish the opening of the compass and to dictate a measure from 1 to 2 millimetres too narrow.

The error would still more certainly be made if in the verification the points of the compass, instead of following a zigzag course, were to describe a series of concentric ovals (plate 15, fig. 3). **THIS LAST FAULT IS VERY COMMON IN BEGINNERS.**

33. **Approximation.** Theoretically the degree of approximation should be the same for the width of the head as for the length.

In practice, however there is sometimes observed a difference of 1 millimetre plus or minus (whence a total divergence which may arise to 2 millimetres) between two widths taken on the same subject at an interval of several years, a difference which ought to be ascribed less to an error in measuring than to a considerable change which has intervened in the fleshiness of the subject.

Remarks Applying to the Measuring of Both Diameters

The corrections and remarks of which the cranial diameters are susceptible are not numerous.

34. Sometimes a wound in the head will render the measuring either inexact or even, for the time being, impossible. The

operator, to shield himself from responsibility, must not omit to indicate under the heading NOTE these circumstances over which he has no control.

35. Irregular or deformed heads should also be the subject of explanatory references, especially when these irregularities are liable to cause errors in measuring.

36. A lack of symmetry between the cranial protuberances which determine the maximum width should not cause the operator to modify the method of operating. In these cases he should observe with more care than ever the symmetry of his own movements in the controlling stage; but he should also note in the margin the length obtained when the head is measured aslant in the direction of the axis of the irregularity.

The peculiarity should be indicated in a note, thus: *head (very) irregular; the width, inclining from right side (or left), measures only 14.5.*

37. In accordance with paragraph 25, page 105, of the preceding chapter, the operator should indicate by means of the letters *rv.* (abbreviation of *review*) the cranial diameters remarkable either for their shortness or their length, after having first verified their scrupulous exactitude by a new measurement and an attentive reading of the graduation.

We may add, in order to give more definiteness to our ideas, that the length of the head is seldom less than 170 millimetres or greater than 200; while the width varies between 140 and 169 millimetres.

SECTION B.—DIAMETERS OF RIGHT EAR

1. Measurement of the Length of Ear (plates 16 and 17)

38. The diameters of the right ear (1) should be measured immediately after the cranial diameters, while the subject is still seated on the stool, facing the light.

(1) For the ear the right side has been chosen in preference to the left (contrary to the rule for the other observations) because of the custom of showing the *right* profile rather than the *left* in judicial photography.

First Stage

39. The subject having his face turned towards the window, make him incline his head considerably to the left and backwards, so that the plane of the right cheek and ear is presented in full light at an angle of about 45.

40. With the right hand take hold of the small caliper-rule by the lower end of the stem, the fixed branch upward; apply the non-graduated side against the cheek, parallel to the line of attachment of the ear with the head, but at about half a centimetre in front of it, the broad branches, called paddles, resting against the skull and being directed towards the back of the head.

41. In this position, owing to the leftward and backward inclination of the subject's head, the stationary paddle of the caliper rule casts no shadow on the upper edge of the ear, from which it is still separated by a space of 1 or 2 millimetres.

Second Stage

42. With the left hand hold the fixed branch immovable, taking as a point of support the top of the subject's head. The left thumb, slightly extended, should rest firmly on the mortise of this branch with the stem, in such wise that the lower surface of the paddle touches *without depressing* the upper edge of the ear; then gently push the movable branch with the right thumb until it *GRAZES* the extreme point of the lobe (popularly *drop*) of the ear.

Third and Last Stage

43. After having glanced once more at the position of the two paddles to see that they both continue to touch, read and dictate the figure shown by the index mark, before withdrawing the instrument.

Remarks on the Measuring of the Length of Ear

44. We cannot insist too strongly upon the care which must be taken in this operation not to depress the skin of either the upper border or the lobule of the ear, which might very easily cause a difference of several millimetres.

45. Operators will find it useful, especially while learning, to divide the adjusting of the caliper-rule upon the ear into two distinct periods :

First period.—The instrument is placed and brought into contact above and below as before directed, but leaving a space of about half a millimetre between each paddle and the corresponding extremity of the ear.

Second period.—Everything being in place, the actual contact is made, first above, by keeping *firm* the adhesion between the caliper and the skin, and making this slight displacement merely by the slipping of the skin on the skull; then below by gently raising the movable arm until it is in contact with the ear. Then the reading of the graduation should be done immediately, the instrument being still in position against the skull.

46. The blending lobules which are prolonged into a *descending* point along the cheek present a difficulty. In the absence of a fold marking an exact boundary between the lower end of the ear and the commencement of the cheek, the operator takes as a lower limit the *groove* or notch which is invariably found in all ears of this kind a few millimetres from the cheek on the free edge of the lobule.

This peculiarity, which may be a cause of error, is indicated by writing after the figure given by the regular measurement, the letters *pr.* (abbreviation for *prolonged*) followed by the approximate distance in millimetres between the chosen line of demarcation and the extreme lower point (1).

Thus the ear represented by the opposite diagram would have, measured in natural size from its upper edge A B to its lower extremity C D, a length of 5.4 centimetres; the prolongation D Y below it (which our artist has somewhat exaggerated) would measure approximately 3 millimetres: so the measure of the length of the organ should appear after its proper heading in this form: **5.4 pr. 3.**

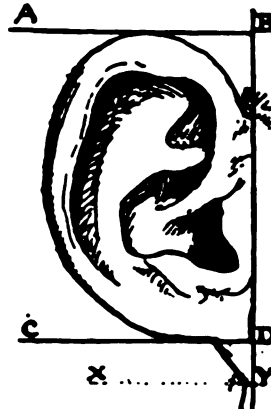


Fig. 23. MEASUREMENT of an ear with a descending lobe.

47. Ears which are cut, torn, indented, etc., must be measured as they are, in conformity with the general directions.

48. **Approximation.** Theoretically the length of the ear should be capable of being measured with the same approximation to accuracy as the cranial diameters, that is, to within a half-millimetre plus or minus. But in practice the softness and

(1) These directions, the result of experience, differ very considerably from those given in the first edition, where it was recommended to write on the signalment the total sum of the real length and the prolongation together.

flexibility of the parts render this operation much more delicate. Therefore, a difference of two millimetres, although faulty, is frequently observed between successive measurements of the same ear, the true length lying between the two. **At 3 millimetres the mistake becomes inexcusable.**

49. We would add, however, that, as the ear may settle a little, especially in old people, there may occur a discrepancy between signalments of one same subject taken at an interval of many years (ten years, for example) so considerable as to represent in reality an increase in the dimension.

II. Measurement of the Width of Ear (1)

50. The width of the ear is taken immediately after the length, by means of the narrow branches of the same caliper-rule, without changing the position of the subject, who remains seated on the stool.

51. This measurement puzzles beginners a little by the change of hands that it necessitates. The stem of the instrument passes from the right hand to the left, and, contrary to the procedure in all the other measurements (this measure and that of the forearm excepted), it is the thumb OF THE LEFT HAND which pushes the movable branch, while that of the right hand holds the mortise of the fixed branch immovable against the ear. So while in the measuring of the length of ear it is the left hand which is supported on the summit of the head, in that of the width it is the right which steadies itself on the top of the forehead.

First Stage

52. Take the stem of the instrument in the left hand, place it horizontally about half a centimetre above the upper edge of the ear, so that the narrow fixed branch is turned downwards and rests in front of the tragus, against the cartilaginous part of the auditory conduit, parallel with the line of junction of the ear with the cheek.

When the fixed narrow branch has been correctly placed, hold it immovable by means of a pressure exercised by the tip of the thumb of the right hand, while the other fingers extended find their point of support on the top of the subject's forehead.

(1) [This measurement having now been abandoned at Paris, the plates relating to it (Nos. 18 and 19) have been replaced by those representing the measurement of the bizygomatic diameter, which has been substituted for it (see *Appendix C*).]

53. With the left hand withdraw the GRADUATED STEM from the skull in proportion to the spread of the ear, until the movable branch can be brought opposite the posterior border.

54. We have seen that during this movement the fixed branch, serving as a pivot, should be kept firmly pressed against the ear by means of the thumb of the right hand, while the other fingers find a point of support on the top of the forehead.

Second and Last Stage

55. Push the movable branch gently forward by means of the left thumb, until it just touches the posterior edge of the hem.

Read and dictate the figures of the graduation before withdrawing the instrument.

Remarks on the Measuring of the Width of Ear

56. This measurement is still more difficult than that of the length of ear. To the complications arising from the softness of the organ is added the difficulty of holding the instrument properly in the turning movement that must be effected, taking as a pivot the ideal line of attachment of the ear which passes in front of the auditory conduit. The difficulty of determining exactly the placing of this ideal line, the point of departure of the measurement, increases still more the inexactness of the result.

57. **Approximation.** There is nothing surprising, consequently, in the fact that the difference between the results of two measurements taken on the same subject may rise to 2 millimetres without being qualified as an error. There will be no mistake, properly speaking, save in a discrepancy of at least 3 millimetres.

Being given the fact that the width of ear varies from one ear to another scarcely more than 10 millimetres, it can be seen how little assistance this measure affords in anthropometrical comparisons. Its interest is purely descriptive. As the ear is a very important organ for identification, its width should appear in the anthropometrical signalment. It seemed preferable to avail ourselves of the fact that the operator had the rule in hand to dictate the width in figures, rather than by the always more or less uncertain qualifications of *small, medium or large* (1).

(1) [But see *Appendix C*, p. 259].

CHAPTER III.—MEASUREMENTS TAKEN BY MEANS OF LARGE
CALIPER RULE

A. Foot. B. Fingers. C. Forearm.

SECTION A.—MEASUREMENT OF THE LEFT FOOT (plates 20 and 21)

1. Place the footstool T (see page 86, § 16, also plate 1) opposite the middle of the trestle for the forearm, on the same side as the handle, at a distance of about 60 centimetres from it. For the names of the component parts of the large caliper-rule consult plate 4.

First Stage

2. Have the subject take the position represented in plate 20. To do this easily, analyze each movement as you proceed, observing scrupulously the following instructions :

3. The operator gives the order : "*Place your left foot on the tracing,*" and when this is done, "*Lean your body forward;*" then : "*Put your right hand on the handle of the table;*" and then only does he add : "*Stand on the footstool on one foot only.*"

4. These commands, announced rigorously in the order given above, will in a few seconds make the most stupid individual place himself in the proper position.

5. The object of this position is to force the weight of the body to rest entirely on the left foot, which, being opposite the right hand of the operator, is more easily measured than the right foot would be. By making the subject lean his right hand on a point of support a little in front of him, the operator causes him to displace his centre of gravity in the same direction; a movement which produces an automatic extension of the toes.

6. Before placing the instrument, the operator should assure himself that the toes are well in place and particularly that the

great toe does not rest sideways on the stool, which would cause a deviation in its direction, and consequently a small diminution in the length of the foot.

It goes without saying that if it were bent, either voluntarily or involuntarily, the operator should correct its position himself, by taking hold of it with his fingers and straightening it out.

7. As a general thing, when the great toe is bent intentionally the operator will perceive it immediately by the position of the other toes, which follow involuntarily the movement of the great one, and THE WRINKLED SKIN of which will strike one at the first glance.

It is difficult, however, for a subject to maintain this false position for more than a minute. To make the toe assume its natural position it would be sufficient, in case of suspected trickery, to slightly bend the knee which supports the weight of the body; this flexion will usually cause the extension of the other toes.

8. After having verified the natural position of the body, of the foot, and particularly of the big toe, place the caliper-rule squarely, so that the fixed branch of the instrument may be exactly applied, with a very light pressure, against the back of the subject's heel and that the inner side of the heel and the joint of the big toe may touch the stem (plate 21).

9. In the case of very flat feet it frequently happens that the instep, instead of forming an arch, projects underneath and prevents the stem from touching at the same time the internal face of the heel and of the great toe. It is sufficient in these cases to apply the instrument against this projection PARALLEL to the position which it would occupy if the projection were absent.

Second Stage

10. Bring down the movable branch gradually until it is in contact with the great toe.

Exert a pressure with the right thumb on the first and second joints of the great toe, if there is reason to fear that the too brutal pushing of the slide has bent the toe anew or that the subject himself has voluntarily drawn up his toes.

11. To facilitate the recoil movement of the slide, impart to the instrument a slight trepidation by gently shaking the extremity of the graduated stem with the right hand (1).

Third and Last Stage

12. Before reading, replace and slightly tighten the instrument, which the bending of the knee or the shaking may have disarranged, and finally dictate the figure indicated.

13. Be careful when resting the finger on the great toe, as directed above, not to exert any pressure on the extremity of the nail, which would cause the flesh to project and increase the length unduly, but merely seek to flatten the two joints.

Remarks on the Measuring of the Left Foot

The observations to which the measuring of the foot give occasion relate to the four principal points following:

14. (1) *Deviation of the great toe.* The letter *d* written after the figure of the measure indicates that the great toe is deviated inwards, toward the other toes.

This initial is followed by the number of millimetres by which it is estimated that this inclination may have diminished the length of the foot. Thus, the foot *24.6—d. 3*, indicates a foot of 24 CENTIMETRES, 6 MILLIMETRES in length, which at some previous time, before being deviated, would probably have measured 24 CENTIMETRES, 9 MILLIMETRES.

No matter how pronounced the deviation of the great toe may be supposed to be, the graduated stem of the instrument must always be placed PARALLEL to the axis of the foot, taking no account of the direction of the toe, which will be so much the farther away from the stem in proportion as it is more deformed.

15. (2) *Retraction of the great toe.* The letters *pl.* (abbreviation for Fr. *plié*, i. e., bent, *pliated*), followed by the figures *2, 3, 4* (millimetres understood), correct approximately the diminution in length caused by an habitual retraction of the tendons of the great toe.

(1) It is essential, in order that this recoil may be easily effected, for the stem of the instrument to be always clean, polished, and when necessary slightly oiled (see page 92, § 46).

This infirmity, generally produced by the use of too short shoes, has received, when very pronounced, the characteristic name of *hammer-shaped toe*; but it is rarely met with in this degree on the great toe. In the latter case it might cause a diminution of the length of the foot by more than half a centimetre.

16. We cannot too strongly recommend that, before writing down *pl.*, one should assure one's self, by making the subject bend his knee and by pressing down on the first joint, that the retraction is not simulated or exaggerated.

17. (3) *The projection of the second toe beyond the first.* The third indication regarding the foot to be noted in the margin relates to the case where the second toe is longer than the first. This peculiarity should be briefly noted by means of the sign $>$, employed in mathematics to express inequality; this sign should be followed by the number of millimetres by which the second toe extends beyond the first.

Example: *Foot 26.4 > 2 (3 or 4).*

This peculiarity of the second toe being longer than the first does not alter the mode of procedure in the measuring of the foot, while rendering it more circumstantial. The movable branch, instead of being brought to the tip of the GREAT TOE, is stopped at the extremity of the SECOND, which the operator should be careful not to push back.

18. The notation $>$, besides constituting a peculiar mark, draws attention to a source of error which somewhat diminishes the precision of the result of the measuring.

19. (4) *Total or partial amputation of the left foot.* A distinction must be made between TOTAL and PARTIAL amputation.

20. If the amputation is TOTAL the measurement of the left foot appears in its usual place, with the indication 000; and a reference under the heading NOTE gives: 1st, the explanation of the peculiarity; and, 2nd, the length of the right foot.

Example: *Left foot amputated above the ankle;*
right = 25.4.

21. The method of procedure is the same in case of **PARTIAL** removal either of the toes or of the whole anterior part of the foot, with this difference, that the length of the left foot is recorded exactly as the instrument gives it.

It goes without saying, that in cases of this kind there is no longer any occasion for the rigorous precision of ordinary measurements. The bending of the left knee, the pressure of the instrument, etc., are no longer necessary. Frequently the measurement will have to be taken with the subject in a sitting position.

22. If the cicatrization is recent, all measuring, even approximate, should be postponed. A note under the *observations* will explain these exceptional cases and cover the responsibility of the operator. That is a question of tact and common humanity on which it is unnecessary to insist.

23. **The approximation** allowed in the measuring of the foot is 1 millimetre **MORE**, and, in the cases pointed out as abnormal, 2 millimetres **LESS** than the true number, which, allowing for the doubling of the error, may cause a difference of 3 millimetres between two consecutive measurements of the same foot.

Discrepancies such as this latter, while not, properly speaking, mistakes, always indicate a certain carelessness.

SECTION B. LENGTH OF THE FINGERS

I. Measurement of Left Middle Finger (plates 22—25)

24. The measuring of the middle finger or *medius* is effected by means of the small branches of the caliper-rule. This indication is especially valuable, for the reason that it **CAN BE TAKEN EXACTLY, TO WITHIN ONE MILLIMETRE at least**. Moreover, it varies from one individual to another by nearly 3 centimetres, and it is physically impossible for the slightest deception to be practiced in connection with it. On the other hand, it requires a rather delicate handling, which is devised in such a manner as to leave nothing, so to speak, to ask of the subject.

25. The measurement to be taken is the length of the *medius* or middle finger of the left hand from its tip to the metacarpal articulation (or first joint), the finger being bent square with the back of the hand. The operation may be divided into three stages:

First Stage (plate 22)

26. Rest the extremity of the large fixed branch of the caliper-rule obliquely against the stomach; stand face to face with the subject, grasp his left medius with the left hand and place it on the back of the caliper-rule, taking care that the end of the subject's medius rests well against the small fixed branch and that his other fingers, index (first), annular (third), and auricular (little) are not bent, but extend beyond the stem on each side.

The precaution of having the other fingers project beyond the graduated stem facilitates greatly the following movements:

27. Confine the subject's medius on the stem by placing his fingers as shown in plate 25, to wit; the left thumb of the operator resting on the third joint of the subject's medius (to keep it in contact with the stem, and prevent it from bending outward), while his other fingers exert a pressure on the wrist of the subject, in such a way as to bend the latter's hand at right angles, and to force the extremity of the medius to press against the heel of the small branch (1).

With the right hand grasp the stem a little above the slide, in such a fashion as to push the latter forward 1 or 2 centimetres.

In this situation, the medius presents itself in almost the correct position.

Second Stage (plate 23)

28. Turn your body on itself one-quarter way round, retaining and carrying along the hand of the subject, who is told at the same time not to move. Compare in this connection the position of the operator in relation to the subject in the two opposite plates 22 and 23. See also plate 24, which is only a repetition, taken from a more elevated point of view, of the position represented in plate 23.

29. It results from this change of relative position that the subject's upper arm is drawn forward and brought into a direct line with his forearm, while his hand is bent at about a right angle in two consecutive places: 1st, at the joint of the medius, with which it forms an angle rather less than 90 degrees; and 2nd, at the wrist, where the angle formed may be greater than a right angle.

(1) If the nail of the finger should project beyond the flesh, the operator must cut it with a small pair of scissors. In certain special cases the head-warden may authorise the operator to omit the cutting of the nail: deduct then 1 or 2 millimetres, according to the length of the nail preserved, from the measure found and write the figure thus corrected in its ordinary place.

A note referring from the finger to the observations should mention the exemption, and explain its motive.

30. In this position, in which the extensor tendons of the subject's hand are stretched to their utmost, and the flexor tendons of the palm are bent, there are few hands, however callous they may be, the middle finger of which cannot be brought into a rectangular position. The operator assists in the straightening movement, continuing to support the third joint with his own thumb and to exert a pressure with his other fingers on the back of the subject's hand (plates 24 and 25). This double pressure, we repeat, has the four-fold result of supporting the end of the middle finger against the heel of the caliper; of preventing the third joint from separating from the stem; of maintaining the position of the medius at right angles to the back of the hand; and of bringing the back of the first phalanx of the medius, and particularly the first joint, into contact with the back of the stem of the caliper. If necessary, to obtain this indispensable contact, the operator displaces, or raises, or lowers, or turns a little, the stem wedged against his chest: "If the finger does not come to the stem, the stem must go to the finger."

The operator should be careful, moreover, in order to give ease to his movements, and especially to keep his subject motionless and prevent him following him in his quarter-turn, to elevate the left elbow considerably.

Third and Last Stage

31. Push the slide down with a rather quick movement of the right hand, exert a slight pressure, and read the graduation before letting go of the subject's hand.

32. When the slide stops exactly between two millimetres, the operator should decide in favor of the larger or smaller number according to secondary considerations left to his own discretion. Another alternative is to repeat the measurement. It is seldom that a second trial will not come closer to one of the two millimetres than to the other, which of course brings all hesitation to an end.

33. **Approximation.** Refer to the corresponding paragraph on the length of the head (page 109, § 15). The degree of precision to be attained in the measuring of the medius is determined by the same figures and is subject to the same remarks as the taking of the cranial diameters (a half millimetre, either plus or minus).

II. Measurement of Left Little Finger (plates 26 and 27)

34. For the measurement of the left *auricular* or little finger, proceed in the same manner as for that of the middle finger.

35. The measuring of this finger is, however, a little more delicate than that of the *medius*. Thus it is often rather difficult to separate sufficiently the first articulation of the little finger from the corresponding and more prominent articulation of the annular (third finger), which has a tendency to press against the small branch of the rule, and might thus increase unduly the sought-for length by one millimetre.

To avoid this error, be careful to always wedge the subject's auricular upward, as closely as possible to the upper edge of the stem of the caliper, instead of midway between the two edges as in the measuring of the *medius*.

It is principally for facilitating this isolation of the articulation of the auricular that the corners of the small branches of the instrument have been hollowed out.

Remarks Applying to the Measurement of Both Fingers

36. 1st, *Ankylosis*. The principal observation to be made regarding the measurement of the middle and auricular fingers bears on the more or less complete ankylosis (stiffening) of the joints.

In the case of complete ankylosis, a distinction must be made between RECTILINEAR ankylosis, which can in no way affect the result of the measurement, and RIGHT-ANGLED ankylosis.

We will not speak of the intermediate ankylosis, called obtuse-angled, as it is very rarely met with in the complete state.

37. When the *complete ankylosis* compels the finger to remain entirely bent (right-angled ankylosis), the figure of the measurement is scarcely greater than that which would be obtained by measuring the first phalanx by itself. It must be recorded just as it is given by the instrument, and the following reference made under the heading NOTE: *right-angled ankylosis of the joints*, specifying by their numbers the articulations affected, and adding the length of the RIGHT *medius* or *auricular*.

38. But the most frequent cause of error for the fingers arises from *incomplete ankylosis*, or rather from a slight induration of the joints which, in manual workers, especially blacksmiths

and common laborers, sometimes prevents a completely rectilinear extension of the fingers of the hand.

The method of procedure in such cases is similar to that in the case of bent toes (see page 120, § 15); the measurement of the left finger is taken as exactly as possible and recorded in its usual place, while the ankylosis is indicated after the dictated figure by means of the letter *k* (which takes the place of *pl.* for the toe), followed by the approximate number of millimetres which this peculiarity has taken off from the real length of the finger. These figures vary between 2, 3 and 4 millimetres, rarely more.

It would be useless in this latter case to note separately the measure of the corresponding member of the right hand, this kind of induration, when it occurs, generally being common to both hands.

39. 2nd, *Partial or total amputation.* When one or more phalanges of the two fingers to be measured have been amputated, the length of the remainder of the member is indicated in the usual place, and there is added in a note:

First, the explanation of the peculiarity;

Second, the length of the corresponding finger of the right hand.

Example: *Left medius, two last phalanges amputated, the right = 12.3.*

Exceptionally small lengths occasioned by surgical operations are indications too valuable, from the point of view of anthropometric classification, to be rejected when they appear.

SECTION C.—MEASUREMENT OF THE LEFT FOREARM (plates 28 to 30 b)

40. The operator, keeping in his hand the caliper with which he has just measured the middle and auricular fingers, and leaving the subject on the side of the trestle-table where the handle and the foot-stool are, goes and takes up his own position on the other side of the table.

41. Before speaking to his subject, he places his caliper, open to the fullest extent, on the trestle-table, the *fixed branch* at his right, the graduated stem turned away from him parallel to the

other side of the table. In this way the tracing of the forearm on the upper surface of the table (see pp. 86-87) appears in its entirety loosely enclosed between the branches of the caliper (plate 29).

First Stage

42. These arrangements made, he invites his subject to *place his left forearm on the outline*.

As soon as this direction has been obeyed, the operator adjusts the forearm parallel to the edge of the table, places the middle finger in the same direction and, if necessary, pushes back the whole forearm until the index finger rests directly on the edge of the table next the subject, and the thumb, disengaged from the other fingers, projects outward (plate 29).

In brief, in this position the extremity of the medius, its first joint, the middle of the wrist and the projecting extremity of the elbow should all lie in a **RIGHT LINE**, parallel to the edge of the table.

43. Then, holding his subject's wrist immovable with the left hand, the operator orders him to *advance his shoulder and bend his body forward*, and guides this movement, if necessary, by means of the right hand, until his subject's upper arm forms with the forearm an acute angle approximately equal to half a right angle (plate 28).

44. But it is seldom that this movement of advancing the shoulder does not disturb the correctness of the position which the subject has assumed; the elbow especially, drawn by the shoulder, is apt to rise slightly from the table. So the operator will almost always have to press it down again and, in general, re-establish the positions of paragraph 42, before proceeding to the second stage.

Second Stage (plate 30 a)

45. Gently move the caliper from right to left, parallel with the edge of the table, until the fixed branch comes into contact with the extremity of the elbow; then bring down the movable branch with the left hand until it presses against the tip of the finger.

46. In this position the instrument indicates nearly the true length. Nevertheless, in order to guard against any possible trickery, resulting particularly from the curvature of the wrist or the bending of the fingers, the operator should execute the following movements before reading the indication of the apparatus:

Third and Last Stage (plate 30 b)

47. Flatten the back of the subject's hand, especially at the wrist, by means of the right hand placed as represented in the drawing, to-wit: the extended thumb pressing on the back of the subject's hand and on the first joint of his middle finger, while the four other fingers pass over the wrist and grasp the edge of the table.

Meanwhile the left hand draws the end of the stem from right to left, in order to keep the fixed branch in close contact with the elbow, and at the same time the left thumb, remaining free, exercises a moderate pressure on the thumb-rest. Then the operator, his eyes fixed on the graduation, lets go the slide for a moment so that it may slip backwards if the pressure against the fingers has been too strong.

And then only, if the position continues to remain correct and no displacement occurs, the operator dictates the indication of the instrument.

Remarks on the Measuring of the Forearm

48. The mistake most frequently made in measuring the forearm consists in not having the upper arm sufficiently bent in relation to the forearm.

The use of the trestle-table, now adopted, has greatly facilitated the correct accomplishment of this movement.

49. Attempts at trickery will generally be repressed by the manœuvres prescribed for the first, and above all for the third stage. If, nevertheless, by reason of some pretended muscular resistance, the aim of these manœuvres, which is to obtain a complete adherence of the lower surface of the wrist and fingers to the table, is not attained, the operator will still have the recourse, after a first measurement with doubtful results, of lifting the subject's hand and bending it strongly at the wrist, afterwards replacing it quickly on the table by means of a vigorous and SUDDEN pressure, while with his left hand he readjusts and holds the caliper as prescribed in the third stage. These movements should be executed rapidly enough to surprise the subject, and should be IMMEDIATELY followed by the reading of the graduation.

We would add, moreover, that in the case of the forearm even the most adroit attempts at deception are always easily discovered, and can diminish the true length only by a few millimetres. So their most certain result is to draw the attention of the operator to the subjects who are guilty of them, and cause them to be suspected of concealment of identity.

50. Whenever an attempt of this kind is suspected, care should be taken to inscribe after the figures of the measurement the letters *tr.*, followed by the number of millimetres by which the dimension is supposed to have been thus altered.

51. It is unnecessary to repeat the observations already made on occasion of the middle finger, and which apply equally to the forearm (ankylosis, amputation of one or more fingers, etc.).

52. Outside of these cases, the most frequent obstacle to the correct measurement of this length is the more or less complete ankylosis of the elbow. Under such circumstances act as has been indicated previously for the foot, the finger, etc.: measure the member as it actually appears, and give under the heading NOTE the corresponding length for the other side of the body.

53. Finally, the frequent cases of COMPOUND or SIMPLE FRACTURE of the bones of the forearm should be recorded, whenever known, as they sometimes cause a very considerable diminution in the length.

They may be detected either by a deviation of the axis of the hand in relation to the line of the wrist-joint, or by the presence of a bony swelling, hidden by the flesh but perceptible to the touch, which results from the overlapping of the bones at the point of the fracture. Take care in such cases to append the measurement of the right member to the length obtained on the left.

54. The degree of **approximation** tolerated in the measuring of the forearm is 2 millimetres below the true number and only 1 above it, allowing for the corrections indicated by the letters *k* and *tr.*

So the total difference between two lengths of the forearm, measured on the same subject, may amount to 3 millimetres. Nevertheless so great a discrepancy ought incontestibly to be qualified as an error, and even as a grave error, if, in place of a diminution of length, it would seem to reveal an increase, in the case of subjects more than twenty-one years old.

SECOND PART

DESCRIPTIVE INFORMATION

CHAPTER I.—CHROMATIC CHARACTERS

A. Color of the eye. B. Shades of the beard and hair. C. Complexion.

SECTION A.—NOTATION OF THE COLOR OF LEFT EYE

I.—General Observations

1. No character presents at the same time more immutability in the individual and more variability from one person to another. The rigorous classification of which its description is susceptible gives it a signaletic value equal to that of the best measurements, while the impossibility of the subject's altering it in the least, and the facility with which the experienced observer can distinguish the shade, without the aid of an instrument, *impromptu*, on the public street, make it the best of descriptive indications. If the importance of the color of the eye from the signaletic point of view has not hitherto been more generally appreciated, this should be attributed to the absence of a rational notation and to the confusion which thence resulted.

2. The analytical method that we are to set forth here has been tested for ten years. If some, at first sight, have found it difficult and complicated, on the other hand numerous agents of the penitentiary administration have succeeded in mastering it perfectly, without any oral teaching, merely by the study of the theoretical instructions which had previously been sent to them. The chromotypographical plate which accompanies this new edition will remove every difficulty.

3. The confusion that is remarked in the popular designation of the color of the eyes arises largely from the great influence which the direction and intensity of the light exercise upon their apparent hue. Thus, for instance, a deep slate-blue eye observed in a counter-light, and at a distance of some metres, will appear black as a result of the contrast between the dark shade of the iris and what is called the white of the eye.

4. The grey eye of the public at large is generally only a blue one with a more or less yellowish tinge, which appears grey solely on account of the shadow cast by the eyebrows, etc.

There is nothing more inexact, more vague, than the designation *grey* applied in daily practice to more than three-fourths of the eyes. Strictly speaking, the grey tint is a mixture of white and black, the complete scale of which extends from black to white. As an example of grey we may take the spot left on white paper by a touch with a black crayon spread by means of a stump, or a wash of india ink on a white ground. Never does a human eye, observed under good conditions, present tones of this kind. The center of the eye, or *pupil*, is a small circle necessarily black; in regard to the circular band which encloses it, called the *iris*, it always has a *colored* ground and could not, therefore, be qualified as *grey*.

5. These so-called grey eyes are generally of a light tone. However, the public sometimes applies the same word to a certain dark blue eye, also called steel-grey, and which we designate by the term *slate-blue* for the deep tones, and *violet intermediate-blue* for the light tones. The word grey should be used to designate the color of the eye only in certain special cases, of which we shall speak further on (see p. 134, note).

6. The eyes commonly called *black* also demand some explanation. There are no more black irises than there are truly grey ones. The eyes thus designated are generally *deep maroon* ones, and sometimes *deep slate-blue*.

7. The epithet *brown* is frequently applied also to eyes that we term *medium maroon* or *dark maroon*, the same that others sometimes call black.

8. All the other adjectives in use for the designation of the color of the eye participate in the same confusion and should be forgotten by the reader at the outset of this study.



Fig. 24. Examination of the color of the left iris.

9. To analyze the color of the iris in a uniform manner, the observer's first care will be to place himself opposite his subject at about 30 centimetres from him, and **with his back to the light**, in such wise that a strong light (but not the rays of the sun) may fall full on the eye to be examined; then he will ask the subject to look him **straight in the eye**, at the same time slightly lifting the middle of the latter's left eyelid (fig. 24).

10. If the measuring-room were lighted from above, and at the same time the observer should happen to be of small stature, he would have to make the subjects sit down before proceeding to the observation of the color of their eye. **It is indispensable, indeed, in order that the descriptions may be susceptible of**

accurate comparison, that the observer's glance should plunge into the eye of the subject in the same direction as the light falls on it.

11. The same rule of lighting should be observed in the study of the large chromotypographical table of the shades of the human iris which is annexed to these instructions (1).

12. Owing to the necessity of examining the iris only under a light coming from a certain direction, with the subject either seated or standing, the order and time of the making of this observation must vary according to the arrangement of the measuring-room. In one place the examination will be made according to the order of the headings, immediately after the forearm; in another, in a special corner, after all the rest of the signaletic process has been completed. In very well lighted places advantage may be taken of the sitting position of the subject to observe the color of the eye immediately after the measuring of the diameters of the ear, etc. In certain prisons, finally, this operation will have to be postponed till after the sitting, and be performed in the yard on all the subjects at one time.

The location of the headings for the eye on the anthropometrical card also necessitates some explanations. In fact, although this feature belongs to the descriptive part of the signalment, it has seemed preferable, from a typographical point of view, as well as from that of the classification, to place it on a line with the anthropometrical observations.

13. When closely and scrupulously examined, it sometimes happens that there appear noteworthy differences in color and shade

(1) The observer who wishes to make use of this table should, therefore, look at each iris in it *separately, perpendicularly* to its surface, at a distance of about 15 to 25 centimetres, with his back turned to the light but not casting a shadow on the plate. The eyes presented, to which we shall revert in the text of these *Instructions*, will be indicated by the letters of the alphabetical series, A, B, C, D, etc., which appear above each vertical column, accompanied in the explanation by the number of the horizontal tier, 1, 2 or 3; number 1 denoting the upper row, which corresponds to the light series, and number 3 the lower or dark series. Thus the eye F² will indicate the eye with a chestnut sector which occurs in the second row of column F; in the same way K¹ will refer to the iris which is found in the 4th class (chestnut pigmentation), just beneath the point of the bracket, and which is distinguished from all others by its serial numbers (4-5-6-3), etc.

Any unprofessional persons who, without having the time to make themselves masters of our descriptive method, might chance to have occasion to observe the color of an eye, could resort to the same conventional method of notation and say, for example, in speaking of the eye of such and such a subject, that it is *identical with or similar to* No. D², of the table, or again that it is intermediate between Nos. H² and G³, etc.

The plate does not pretend, however, to offer a specimen of all the combinations of shades, infinite in number, that it is possible to observe in the human iris, but only facsimiles, to the number of two or three for each class, of the most frequent eyes. The others correspond to cases presenting some difficulties of classification. It is, for example, intentionally incomplete as regards the *light unpigmented eyes*. Hence it is not rare to meet with eyes much more azure, transparent or pale (that is to say whiter) than the three first of the 1st horizontal tier (A', B', C') but as irises of this kind offer no difficulty of interpretation, and should evidently be ranged farther to the left in this same class 1, it has seemed preferable not to add them to the 54 types already represented.

between the right iris and the left. So it is recommended to base the observation on the left eye alone, which is opposite the right hand of the operator. The only exception to this rule is when the eye is injured in a permanent manner by a film or an inflammation, or when the orbit is empty, while the right remains normal.

14. The observer should commence to make written statements only after having examined under the conditions prescribed in paragraph 9 the eyes of a certain number of individuals, and become thoroughly familiar with the principles of the method of notation hereinafter prescribed.

II. Analysis of the Parts of the Eye

15. The round or *apple* of the eye is composed, as we have said, of a black central circle, called the *pupil* (fig. 25, No. 8), and a circular colored band, called the *iris* (fig. 25, No. 9).

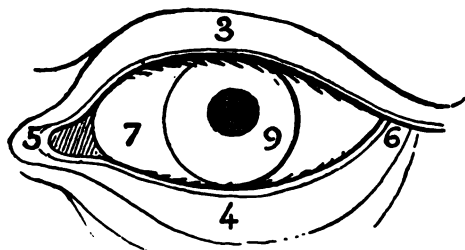


Fig. 25. DESIGNATION OF THE PARTS OF THE EYE.

3, Left upper eyelid; 4, Left lower eyelid; 5, Inner point of left eye and lachrymal caruncle; 6, Outer point of left eye; 7, Sclerotic, or white of the eye; 8, Pupil; 9, Iris.

When the color of an eye is spoken of, it is necessarily the iris that is meant; the healthy and normal pupil being perfectly black in the lightest eyes as well as in the darkest.

19. There are distinguished in the iris two principal zones the coloration of which is generally different: 1st, the *areola* (1), which borders the pupil; 2nd, the periphery or external zone (that is, the part of the iris nearest the white of the eye).

(1) Do not confound the *areola* with the *more or less grey pupillary zone* less than a millimetre wide that is often observed, principally in light eyes, immediately around the pupil. The *areola*, in the sense in which we understand it, generally covers nearly a third of the *whole iris*. See as an example of the *pupillary zone* the eyes A¹, (the first in the upper left hand corner of the plate) and C² (column C, 2nd horizontal tier).

17. The more or less orange-yellow matter which is observed in the majority of eyes when one examines them under the conditions of lighting prescribed above, is designated under the name of *pigment* of the eye. The more abundant this pigment is in the eye, the darker the latter will appear and the nearer to the type that we call maroon.

III. Principles of Classification

18. The basis of the notation rests on this point, that there are in the human species only **two fundamental types of eyes**: the **unpigmented eyes** and the **pure maroon eyes**; and that all the other hues should be regarded as intermediate between these two extremes.

19. We understand by *unpigmented eyes* the eyes which, when examined close at hand, in conformity with the instructions of paragraph 9, appear to be *devoid of orange-yellow matter*; their shade is *azure, slaty* or *intermediate* between these two tones. This is the blue eye of the populations of northern Europe. They are represented in the first vertical column (A) of the chromatic table of the iris.

20. The hue of the *pure maroon eyes* is uniform and recalls the shell of the fruit of this name (the large French or Italian chestnut) when it is ripe and fresh and its envelope still clean and shining. It is the black or dark brown eye of common parlance, the eye of the Arab, of the negro, of southerners in general. The tone of eyes of this class is more or less deep, more or less light, but its general aspect is much more uniform than that of the series of unpigmented eyes. (Compare from this point of view the first column of the chromatic table with the three last columns.)

21. As to the eyes of composite shades, which comprise three-quarters of the eyes of Europeans, most of them approach either the unpigmented eye (azure or slaty), or the maroon eye. It is the variations that are observed in *the intensity of their orange-yellow pigmentation* which serve as the basis of their denomination and consequent classification.

22. *Scale of pigmentation.*—In the very great majority of cases the orange-yellow pigment is grouped in a circle or areola around the pupil, and sometimes in dots, little triangular spots, or circular crescents, in the outer zone.

23. The four varieties of pigmentation which serve for the notation and classification of the intermediary eyes have received the names of *yellow*, *orange*, *chestnut* and *maroon*. It is important to understand the signification of these terms.

24. The *yellow* pigment is near enough either to *pulverized sulphur* or to *naples-yellow* (pale quality), or even to *chrome-yellow* and *straw color*.

25. The *orange* is reproduced exactly, not by the skin of the fruit of that name, but by what is called in painting *yellow-ochre*. The exact term would be *yellow-orange*.

26. The *chestnut* pigment recalls *raw* or *burnt sienna*, or the skin of the *chestnut* when it is *dry* and *dusty*, or the *dried* envelope of a *hazel-nut*.

27. In practice, and in the absence of a standard of comparison, the varieties of pigmentation of the eye are distinguished by a concentration of the attention on the following points:

(1) The *yellow* is distinguished from the *orange* by the absence of reddish tints or by a very slight degree of pigmentation.

(2) The *orange* from the *chestnut* by a shade more vivid and not dulled with black.

(3) The *maroon* eye from the *chestnut* by a less striated and thready pigmentation, more velvety, more abundant and generally, but not necessarily, deeper.

28. We would remark that the *chestnut*, the central degree situated between the orange and the maroon, has no positive qualities which are peculiar to it. Any eye is called *chestnut* which is neither definitely orange nor definitely maroon, but intermediate between the two as regards the *quality*, *quantity* or *tone* of pigment.

It is on account of this intermediary character of the central group that we have preferred to designate it by the indefinite expression of *chestnut* in preference to others which, like *hazel*, *red*, *reddish*, *fawn*, etc., have too limited, too determinate a significance.

29. Eyes incompletely maroon, that is to say, whose surface is not entirely covered with maroon, are subdivided into two classes: (1) the eyes called abbreviatively *maroon-in-circle*, in which all the pigment is grouped around the pupil; (2) the maroon eyes spotted with greenish-yellow (called briefly *greenish-maroon*), in which the pigment invades also a part of the periphery, leaving exposed on the surface of the iris only sectors or little *discontinuous* crescents, either *greenish-yellow* or *deep-slate color*.

30. To sum up, if we place at the beginning the *unpigmented* class and at the end the *pure maroon*, the seven divisions thus obtained will appear in the following order:

1. Iris *unpigmented* (that is to say, without any orange-yellow matter).
2. Iris pigmented with *yellow*.
3. Iris pigmented with *orange*.
4. Iris pigmented with *chestnut* (incompletely).
5. Iris pigmented with *maroon* grouped *in circle*.
6. Iris pigmented with *maroon* streaked with *greenish*.
7. Iris pigmented with *pure maroon*.

31. This series of terms should be learned by heart so that it can be recited, without hesitation, from top to bottom and from bottom to top, mentioning the serial numbers.

The anthropometrical apprentice should, thus, before studying the following paragraphs, become sufficiently familiar with the serial numbers attached to each of these classes to be able to answer by himself without hesitation such questions as these: what is the name of the fourth class, or of the sixth, or of the second; and, inversely: what is the serial number of the *greenish-maroon* class, of the *orange* class, or of the *maroon-in-circle* class, etc.

32. The pigmentation, as we have said above, is nearly always grouped in the central zone of the iris, where it forms a species of areola which partly masks the shade of the deep layers, whence the necessity, in noting the color of the iris, of examining separately the two parts: 1st, areola; 2nd, periphery.

33. *Areola*. The shade of the areola is determined by that of its pigment (1); for the sake of more precision the qualifications of tone are added; *light*, *medium* or *deep*. These three words, joined successively to the four species of pigmentation: *yellow*, *orange*, *chestnut* and *maroon*, thus form a scale with twelve divisions which admits of passing by imperceptible transitions from light yellow to deep maroon. The interval between each pair of adjacent terms becomes so small that the confusion of one of them with the following one could not constitute an error. Thus one may easily confound, without making a mistake properly speaking, a *light yellow* with a *medium yellow*, and this latter with a *deep yellow*; but not a *light yellow* with a *deep yellow*. In the same way, the *deep yellow* may be taken for the *light orange*, but not for the *medium orange* and still less for the *deep orange*, which in its turn will be with difficulty distinguished from the *light chestnut*, etc.

34. In the eyes of the 1st class (unpigmented), with a *uniform* hue, the description of the absent areola is replaced by a dash (—), and the shade of the eye is now indicated only by the periphery (see chromatic table, Nos. A¹, A², A³).

35. *Periphery*. The numerous shades of the periphery are divided into three principal categories, represented on the chromatic plate by the three horizontal tiers, to-wit; those of the

(1) It is the custom in Paris to precede the indication of the shade with the form of the areola. This is an accessory detail the obtaining of which is not obligatory. Three kinds of areolas are distinguished: the *dentilated*, the *concentric* and the *radiating*. The areola is called dentilated when the sparse pigmentation exists only in the median zone of the iris, on which it forms hatchings, festoons, or linear lacework. It is qualified as *concentric* when the equally scanty coloring matter remains confined around the pupil in a circular zone one or two millimetres wide which appears as if cut with a punch.

Finally, the areola becomes *radiating* when the coloring matter, having invaded the whole of the concentric zone, seems to send from it spindles of pigment radiating towards the periphery. This last mode of grouping might be considered as resulting from the extension of the concentric areola. It is the only one that is observed in the maroon pigmentation or, with some exceptions, in the chestnut pigmentation, while the orange, and still more the yellow, group themselves in an areola of any one of the three forms indifferently.

In case of doubt regarding the special designation of the areola, one may resort to the juxtaposition of the two terms between which one hesitates (see on this subject the examples in chromatic table F¹, C², E⁵ and G⁵).

The same terms serve also to characterize the form of the system of *pale* or whitish filaments which a great many unpigmented eyes display (see in this connection columns B and C of the chromatic table).

azure or light tones (tier 1), those of the *dull violet* or faience blue, which we conventionally call *intermediates* (tier 2) (1) and those of the *slaty* or dark tones (tier 3).

36. This threefold division is easily applicable to the 1st class of eyes, where the absence of pigment leaves the deeper layers of the eye uncovered.

37. For the 2nd and 3rd classes (yellow and orange pigmentation), it is frequently advisable to add the modifying term *greenish*, and sometimes those of *greenish-yellow*, *greenish-orange*, followed themselves by the words *light*, *medium* or *deep*, when the yellow matter, instead of remaining grouped around the areola, partially covers the periphery with spindles, crescents, or pigmentary dots.

38. From the fourth class (chestnut) on, the azure periphery is no longer met with. The terms most frequently employed become: *intermediate*, *slaty*, *greenish-slate* and *greenish-chestnut*, this latter relating to the much pigmented eyes which approach the definitely maroon type.

39. The *intermediate violet* itself ceases to appear in class 5 (maroon-in-circle). The original three-fold division is then entirely replaced by the general qualifications: *light*, *medium* or *deep*, combined with the terms *yellow*, *greenish-yellow*, *slaty*, *greenish-slate*.

40. The periphery of the 6th class (maroon spotted with greenish), is distinguished from the 5th class by the addition of the word *maroon*.

41. In class 7, the *periphery* is identical with the areola, which is indicated by the letters *id.*, for *idem* (see the chromatic table, Nos. R¹, R², and R³).

IV. Complementary Signs

42. *Underlinement and parenthesis.* The notation of the shades of the periphery, however precise it might be, would not

(1). The word *intermediate*, represented by the initial *i.*, always replaces in chromatic descriptions of the iris the expression *violet blue*, which could only have been written in full, the letter *v* being reserved for the abbreviation of greenish [*verdâtre*] (used as indicated in §§ 37-39). Be careful in the case of signalments intended for the public to replace the word *intermediate*, which is comprehensible only to the initiated, by the complete expression *violet-blue*.

succeed in expressing the general aspect of a large number of eyes, if there were not added in each particular case the indication of the proportional surface covered by the areola. Without this auxiliary information the same description: *yellow areola on an intermediate ground*, for example, might be applied to two totally different eyes: here, to an eye almost entirely blue, and there, to an eye almost entirely yellow. (Compare from this point of view the contiguous eyes C¹, D¹, E¹, and F¹, in the chromatic plate.)

43. In other words, from the descriptive point of view the respective extent of the two component parts of the iris is a factor as important as their special intensity of color. When one of these two elements manifestly exceeds the other, this predominance is expressed by underlining the term in question (see F¹ in the chromatic table). When, on the contrary, there is question of expressing the small part played in the general coloration by one of the shades noted, the adjectives employed are enclosed in a parenthesis (see C¹ in the table).

Thus { (*pale-yellow*)
violet-intermediate } indicates a blue eye variegated with light yellowish rays (D²); while { yellow
violet-intermediate } will be applied to an eye like G¹, where the blue ceases to be the dominating shade; yellow (intermediate) and yellow intermediate are almost equivalent; the first formula denotes the *minimum quantity of blue*; the second the *preponderance of yellow*.

44. When the component shades occupy approximately equal spaces on the field of the eye, and there is no reason to underline one term rather than the other, this equality is expressed by the sign equals (=) written at the beginning of the third line. From this point of view one might also say that the function of the sign = is to affirm that the absence of underlinement or parenthesis does not result from the operator's forgetfulness, but that it is intentional.

45. *Classification number.* It is the indication of the degree of pigmentation, formulated by means of one of the seven serial numbers mentioned in paragraph 30 (p. 137), which is the key to the classification; an error on this point may render every future search useless.

This information is placed on a line by itself above the two headings relative to the areola and the pigmentation; but it should not be written until the last, after the two zones have been observed and noted; for it is only their resultant.

46. Now we have seen that the classification is based at the same time on the QUANTITY OF THE PIGMENT and on the quality of INTENSITY OF ITS SHADE. The two elements nearly always go together. Thus the eye without yellowish matter, whether it have an azure, violet-intermediate or slaty ground, will be marked No. 1; the eye in which yellow is observed will be marked No. 2; orange, No. 3; chestnut, No. 4; No. 5 will distinguish the maroon eyes in which the pigmentary areola is separated from the periphery by a circular zone of lighter hue and more or less devoid of maroon; No. 6 will be applied to irises both zones of which are covered with maroon, but in which the transparency of the outer zone allows some greenish-yellow or slate-blue crescents to be seen; and No. 7 will be entirely maroon.

47. When one hesitates between two classes, the class which seems the more probable should be written first, and after it, separated by a hyphen, that with which confusion is possible. Thus the formula:

2-3

Areola: medium yellow

Periphery: medium greenish-intermediate

would be applied to a pigmentation midway between the yellow and the orange, that is to say having a hue in which traces of *red* begin to appear, in such small quantities however that it does not seem as if it ought to be taken account of in the classification, although enough to create a possibility of a subsequent error of interpretation on this point. A near equivalent to the eye 2-3 is the eye 3-2.

In the same way the eye H³ of the table, for which the formula is:

3-4

Areola: deep orange

periphery: = medium greenish-slate

means an eye with pigmentation midway between the orange and the chestnut; that is to say, furnished with a pigment so thick and

dark that there is reason to fear that at other times and places it may be qualified as chestnut. (Compare from this point of view the eye H^3 with its near equivalent J^2 .)

The eye Q^2 of the table:

7-6

Areola: deep maroon

Periphery: medium (greenish-yellow) maroon

denotes a maroon eye in which an attentive examination reveals greenish rays in very small quantity, but sufficient to perhaps lead some other observer to class this eye in the neighboring division 6-7.

48. Compare the irises Q^1 , Q^2 and Q^3 of the chromatic table. These eyes are in general aspect absolutely identical. A careful examination, however, seems to show that the iris Q^2 , the only one which is classed in 7, is less abundantly provided with yellowish crescents in the periphery than the two others. Nevertheless, the difference is so slight that it is likely to escape an observer who is not forewarned or who is not so well instructed; we will even go so far as to say that, the existence of these crescents is disputable. In such matters the transitions are so slight that it is impossible to trace an exact limit.

Thus the employment of double numbers is a great resource in all doubtful cases. It is a safe-guard, a loophole, which the observer provides for himself. He should not hesitate to make frequent use of it. The abuse of it commences only when there is an error as to the class with which the eye to be described is liable to be confounded.

49. Let us notice once more, at the other end of the scale, the three irises in column C, where the yellow is in such small quantity that it has not prevented us from placing these eyes in the unpigmented class. In the same way the eye D^3 , 2-1, is placed in the yellow class, although it has scarcely any more yellow in it than the others. As for the eye D^2 , which for lack of space we have been compelled to place under the bracket of class 2, it evidently belongs to the unpigmented class, as is further indicated by its serial number, 1-2, and by its pale concentric areola in which the presence of yellow is hardly perceptible.

50. **Approximation.** Experience shows that it is generally impossible for an observer at all familiar with the divisions described in paragraph 30 to hesitate between more than two qualifications, or, which amounts to the same thing, to skip an entire class and range, for example, under No. 2 what he had previously put under No. 4, or again, to confound orange with maroon, or a maroon-circle eye with a pure maroon eye, etc.

HESITATION AND ERRORS WILL, IN THE GREAT MAJORITY OF CASES, BE LIMITED BETWEEN TWO CONSECUTIVE SERIES.

51. However, an exception should be made in the case of the *chestnut* pigmentation, which may limit at the same time on the *maroon-circle* and on the *greenish-maroon* and inversely, which is indicated by the use of three numbers, 4-5-6, or 5-4-6, or 6-5-4. This anomaly arises from the subdivision of the maroon into three classes, while the other pigments, yellow, orange and chestnut, are each grouped in one single division. This species of eye is quite frequent: it has received from the anthropometrical clerks the abridged and characteristic name of *three-limits eye*.

52. Besides the combinations 4-5-6, which, in the nature of things, are quite inevitable and consequently legitimate, the employment of a triple class number is also allowed for certain embarrassing eyes, especially in the case of inexperienced observers. It is much better, in case of ignorance, to attribute three or even four class numbers to an eye than to risk omitting the true one. As an example of an eye with several numbers, outside the *maroon—chestnut*, see the eye K¹ of the chromatic table. The abundance of its pigmentation might enable it to be classed with the *greenish-maroon*, while the light tone of its shade would approximate it to some extent, though wrongly, to the orange. This is a unique specimen, almost invented for the sake of the illustration, and one which is only exceptionally observed, perhaps in less than one case out of ten thousand.

V.—Remarks on Some Exceptional Cases

53. We have seen that, in the great majority of cases, as we progress from left to right in the series the quantity of pigment increases with the intensity of its hue. So it happens that among the pigments the yellow and orange are almost the only ones that are often placed in parenthesis.

54. Furthermore, when one encounters an eye manifestly but little pigmented and having only a few dots of a clear and vivid orange (marigold-yellow, for example; see the eye F³ in the table), it is the rule *to class it with the yellow*, that is to say, to range it among the scantily pigmented eyes *rather than with the orange*. Inversely, the eyes provided with a **very abundant yellow** circle should be marked with the figure 3, and be placed in the *orange* class, although their areola might at the same time be qualified as yellow (see G¹ in the table). These are abnormal formulæ to which it is only exceptionally necessary to resort. In the same way, certain deep reddish circles, irregular and incomplete, should be designated and classed as orange rather than as chestnut (see I¹ and I³ of the table).

55. In other words: **The classification being based both on the quality and the quantity of the pigment, when the second factor does not correspond to the first the eye recedes one class.**

Without these restrictions, one might imagine eyes classed as *orange* which were at the same time *unpigmented-limit*; and inversely, there might be found in the *unpigmented* division some *orange-limit* eyes. This skipping of a class would interfere with the rules for the classification and for verifications in the anthropometrical file. The orange color in such small quantities is moreover always difficult to distinguish from yellow.

56. The chestnut gives occasion for an observation of the same kind. By its position in the scale, this class is intermediate between the blue eye and the maroon eye, and comprises only eyes whose pigmentation is incomplete. As a result, it is sometimes, theoretically and practically, preferable to class in No. 6 (*greenish-maroon*) the eyes almost entirely deep chestnut where the coloring matter is not grouped in a circle around the pupil, but scattered indistinctly and abundantly over the whole iris. Besides, the general aspect of eyes of this class is very much nearer to that of the *greenish-maroon* eyes than to that of the *chestnut* eyes (see Nos. M³ and N¹).

57. As for the eyes pigmented with pure chestnut, they are, so to speak, never observed without a mixture of greenish (see the eye K¹ already mentioned, also L²).

58. WE REPEAT, MORROVER, THAT IN SUCH CASES THE OBSERVER IS MORE THAN EVER URGED TO PROTECT HIMSELF BY INDICATING THE POSSIBLE LIMITS, WHICH HE EXPRESSES BY A DOUBLE OR TRIPLE CLASS NUMBER. Moreover, if he believes it necessary to depart from the ordinary numeration of the pigment, he should indicate that this is intentional on his part, and not the result of an error, by underlining the class number which is thus modified in its application. Furthermore, he will do wisely, so long as his competency as an anthropometrist is not recognized, to make an explanatory note of it under the heading of peculiarities or miscellaneous information. It is needless to say how rarely he should have to resort to this.

VI. Peculiarities

59. The peculiarities and anomalies presented by the iris should be written on the fourth line, under the corresponding heading, or under No. III of the peculiar marks of the face.

60. The expression *trouty*, which is applied to the blue as well as to the maroon eyes, serves to designate certain *reddish* spots, also termed *fire spots*, which resemble the speckles of the *trout*. These spots do not modify the classification of an eye, and intervene in its denomination only as a peculiar mark. Thus the eyes *slate-blue trouty* and *azure-blue trouty* are to be classified in class 1 (unpigmented eyes) if apart from these spots the iris contains no yellow (see, for example, H² of the chromatic table, which however is not a very clear case).

61. Certain irises present, either on the right side or the left, clearly cut segments of a different color, generally darker than the rest; this is described by the formula: *chestnut sector, left iris* (or *right*). (See F², already mentioned.)

62. There will also be noted on the fourth line the frequent presence in old men of the *pearly* [nacreous, Fr. *nacré*] *circle*, also called *senile cirde*, which, partially concealing the periphery, renders the observation of the eye more difficult, especially as regards the distinction of the three maroon classes (see the eye R²).

63. Finally we have seen that the presence of the *concentric greyish zone*, when very pronounced, should also be mentioned on the fourth line (see note, p. 134, and the iris A¹ in the table).

64. When the shade of the left eye differs notably from that of the right, the first is written in its proper place and the second in the remarks. This is the anomaly popularly called in France *vairons* (from the Latin *varius*, varied). [The equivalent English expression is *odd-eyed*.] The same course will be pursued regarding such references as: *light* (or *heavy*) *film on left eye* (or *right*), etc.

65. In the case of one-eyed persons, distinguish between the expression: *blind in the right* (or *left*) *eye*, which implies only deprivation of sight, and that of: *right* (or *left*) *eye missing*, or, still better, *amputated*, which signifies that the socket is empty.

66. In case of subjects one of whose eyes has been amputated, note in the *miscellaneous information* whether they *wear a glass eye*.

VII. Abbreviations—Final Summary

67. The space left on the cards for the inscription of the color of the eye being very limited, we have been compelled to adopt a certain number of abbreviations, of which the following is a list, and the use of which is obligatory.

Form of the areola (optional indication)	{	—. areola absent or almost imperceptible. <i>d.</i> dentilated. <i>c.</i> concentric. <i>r.</i> radiating. <i>d.-c.</i> dentilated-concentric, etc.
Quality of the pigment	{	<i>j.</i> yellow (Fr. <i>jaune</i> , compare <i>jaundiced</i>). <i>or.</i> orange. <i>ch.</i> chestnut. <i>mar.</i> maroon.
Tone of the shade	{	<i>cl.</i> light (or <i>clear</i>). <i>m.</i> medium. <i>f.</i> deep (Fr. <i>foncé</i>).
Fundamental shade of the periphery	{	<i>az.</i> azure. <i>i.</i> intermediate (violet). <i>ard.</i> slaty (Fr. <i>ardoisée</i>). <i>v.</i> greenish (or <i>verd</i> , Fr. <i>verdâtre</i>). <i>id.</i> (Latin <i>idem</i> , the same) indicates that the pigmentation of the periphery is of the same shade as that of the areola.

68. To SUM UP, the descriptive formulæ for the colors of the iris are composed of four lines:

- (1) *Class number.*
- (2) *Areola: form, shade, and tone of pigmentation.*
- (3) *Periphery: proportion of the surface covered, shade and tone.*
- (4) *Peculiarities and anomalies of the eye.*

Example:

4-3
c. ch. m.
i. v. cl.

1st. The CLASS NUMBERS express by their single, double or sometimes triple figure the degree of certainty of the observation.

2nd. The DESCRIPTION OF THE AREOLA, when its form is noted, begins with one of the letters *d.*, *c.* or *r.*; next comes the obligatory indication of the pigmentation: *pale*, *j.*, *or.*, *ch.*, or *mar.*, itself followed by the letters *cl.*, *m.*, or *f.*

3rd. The PERIPHERY in the first three classes is *ax.*, *i.*, or *ard.*, more or less *verd* (*v*), with or without pigment, the whole followed by the letters *cl.*, *m.* or *f.* After the fourth class there is almost always occasion to mention the presence in the periphery of pigment, either *j.* or *or.* In the 7th class, the shade is *uniformly mar.* from the AREOLA to the PERIPHERY, and the line for this latter contains only the sign *id.* We find an analogous condition in the unpigmented eyes of the 1st class when, the iris being uniformly blue, the areola unprovided with pale filaments cannot be distinguished from the peripheric zone: the emplacement of the absent areola is then represented by a dash (—) and the letters *ax.*, *i.*, or *ard.* appear alone on the third line. (Compare from this point of view the notation of irises in column A with that in column B.)

4th. The fourth line, that of PECULIARITIES, remains unoccupied in the great majority of cases.

SECTION B. NOTATION OF THE COLOR OF THE HAIR AND BEARD

69. The various shades of the beard and hair are more easily arranged in a series than the colors of the eye.

70. The two opposite terms in the scale are on the one hand the *very light blonde*, and on the other the *pure black*, which

might be designated by the expression *raven black*. Between these two extremes all the successive gradations of the chestnut tones are placed. The complete scale is as follows, the red hair left aside:

<i>Blonde</i>	{	<p><i>albino blonde</i> and <i>very light blonde</i>. <i>light blonde</i>, sometimes <i>light tow-color</i> or <i>flaxen</i>. <i>medium blonde</i>. <i>deep blonde</i>.</p>
<i>Chestnut</i>	{	<p><i>light chestnut</i>. <i>medium chestnut</i>. <i>deep chestnut</i>. <i>chestnut-black</i>. <i>pure black</i>.</p>

71. It is important to distinguish the *pure black*, or raven black, from *chestnut-black*, which corresponds, in France, to most heads of hair popularly called simply black or dark brown.

Pure black is not common in France, but, on the contrary, it is the classic color of Spanish hair.

Deep chestnut preserves its usual meaning. Hair of this shade, without being *chestnut-black*, is near enough to this hue to sometimes be confused with it, especially by artificial light.

Medium chestnut and *light chestnut* are each one step lighter.

The distinction between *light chestnut* and *deep blonde* is delicate. Thus one is often led to describe the same shade as deep blonde in a woman, which in a man he would have termed light chestnut.

Medium blonde and *light blonde* need no definition.

The expression *very light blonde* will be employed occasionally for the designation of the exceptionally fair hair met with among the populations of northern Europe. We would mention also the *albino blonde*, which is a pathological case.

72. *Red* beards and hair, which could have no place in the above series, are described according to their shade by the expressions:

mahogany red (or *bright red*): *light*, *medium* or *deep*.
blonde red: *light*, *medium* or *deep*.
chestnut-red: *light*, *medium* or *deep*.

74. The expression *fire-red* should be avoided, as it might be interpreted to mean *deep red*.

74. In the combinations of red, either with blonde or chestnut, the observer has the resource of underlining or putting in parenthesis one of the two component terms, according to the predominance of one or the other shade, by analogy with the directions regarding the color of the eyes (see p. 139, § 42).

75. Finally, to each of the preceding categories the qualification *turning grey* may be added, which also may be underlined or placed in parenthesis, to express the mixture, in various proportions, of the white and colored hair.

76. It will be seen that we have excluded from this vocabulary the word *brown* (Fr., *brun*, dark) the significance of which is always vague. The hair spoken of as *brown* generally corresponds to deep chestnut or chestnut-black, but the same expression applied to the beard often denotes a mixture of black hair with deep chestnut-red hair. Finally, in painting, the word brown is applied to the color of the deep chestnut verging on black, and in general to every color very much toned down with black.

77. The meaning of *dark* (Fr., *brun*, compare *brunette*) in the description of persons is never very definite except where it is employed as the opposite of *blonde*. It is then a synthetic term, which signifies the union in a single individual of deep chestnut or chestnut-black hair, dark eyes, and a more or less pale or swarthy complexion.

78. The exact indication of the shade of the beard would often necessitate a special notation for the various parts; *mustache*, *side-whiskers* (Fr., *favoris*) and *chin-whiskers* (Fr., *barbiche*). So the rule is to give preference to the mustache. Even in proceeding thus, many beards will be met whose uncertain shade, resulting from the mixture of hair of various hues, can only be expressed by formulæ of this kind: *medium blonde beard strongly mixed with red*, *blonde mustache with chestnut whiskers mixed with red*, etc.

79. *Note.* As regards the nature, the abundance and the different kinds of implantation of the hairy system, see, in the chapter on characteristic features, pages 187 for the hair and 189 for the beard.

List of Special Terms, with Their Abbreviations

<i>blonde</i>	bl.	<i>turning grey</i> (Fr. <i>grisonnant</i>)	gr.
<i>chestnut</i>	ch.	<i>bright</i> (or vivid)	vif.
<i>black</i>	noir	<i>light</i> (or clear)	cl.

SECTION C.—COLORATION OF SKIN, AND ETHNIC INDICATIONS

80. In the notation of the shade of the *complexion*, a distinction will be made between the **pigmentary coloration** and the **sanguineous coloration**.

The first term refers only to the variation of the brownish-yellow matter which colors more or less abundantly the skin of all human beings, even of those of the white race; and the second to the greater or less amount of blood which the transparency of the skin allows to be perceived.

81. Each of these headings will be answered by one of the qualifications *little*, *medium* or *great*, which are represented by means of the abbreviations *p.*, *m.* or *g.* (1)

Thus the *swarthy* complexion often remarked in the Arab should be described as:

COLORATION	}	PIGMENTARY	<i>great</i>	(or even <i>none</i>).
		SANGUINEOUS	<i>little</i>	

while the *sanguine* or *florid* complexion is described by:

COLORATION	}	PIGMENTARY	<i>little</i>
		SANGUINEOUS	<i>great</i>

82. There should be indicated in more detail in the paragraph on characteristic features the abnormal colorations which might seem to be of *pathological* origin, such as the *bilious complexion*, the *jaundiced* and *bloodless* or *anæmic complexion*, *sanguinary eruptions of the face*, *acne*, *pimples*, or even a mere *sunburn* or *freckles*, etc. The question of complexion plays the principal role in what are called good or bad looks.

(1) We shall have occasion to see in the following pages how numerous are the headings which permit of the typical answer { *little* } *medium* { *great* } (17 out of a total of 31).

To facilitate the task of the observer the signaletic cards printed [in the French Government Printing Office at] at Melun (form of 1893) distinguish by a *capital* initial the headings which should be answered by one of the preceding adjectives of dimension, while the initials of the other headings are printed in letters of the same kind as the rest of the work, that is, in small letters.

Compare, for example, in this respect, the typographical reproduction of the headings: { beard..... coloration { Pigmentary..... } hair { Sanguineous..... }

The following mnemonic phrase sums up the practical application of this arrangement: "to every descriptive heading beginning with a letter of *dimension* (that is to say a capital) answer by one of the qualifications of *dimension*: *little*, *medium*, or *great*."

83. When the peculiarity of coloration is connected with the ethnic or *race* origin, this latter indication then becomes the primary element of the whole descriptive signalment, and should be placed by itself on the *dotted* line which precedes the heading of the descriptive information(1).

Examples: *pure negro, negro greatly (or slightly) crossed, Chinese, Japanese, cross of Kanaka and European, etc.*

(1) This space has been recently added at the request of the English officials charged with the application of the anthropometrical signalment in India.



CHAPTER II. MORPHOLOGICAL CHARACTERS HAVING
SPECIAL HEADINGS ON THE SIGNALISTIC CARD

A. Forehead. B. Nose. C. Ear. D. Build (breadth and girth).

SECTION A.—DESCRIPTION OF THE SHAPE AND DIMENSIONS OF FOREHEAD
(plates 31 and 32)

1. The forehead is examined from the point of view: 1st, of the degree of prominence of the superciliary arches (1); 2nd, of the degree of inclination of the line of its profile in relation to an imaginary horizontal plane passing through the root of the nose; 3rd, of the height of the upper extremity of this same line above the same plane; 4th, of its width measured transversely from temple to temple.

2. As in the case of all the characters susceptible of being measured that we are to examine in the course of the two following chapters, the heading *arches* is answered by one of the adjectives, *small* [or *little*], *medium* or *large* [or *great*].

3. The *inclination* of the frontal line, compared among different individuals, varies between two extremes and might be similarly qualified as *little*, *medium* or *great*. Nevertheless, to avoid any misinterpretation, the customary equivalent terms are used: *receding* (Fr. *fuyant*), *intermediate* and *vertical* (plate 31, 1st row), to which there may be added, in extreme cases, at the beginning, *very receding* and, at the end, *prominent*. The latter will itself be replaced by the *synthetic* term *bulging* (Fr.

(1) Superciliary arches (or *arcades*) is the name given to the bony ridge which serves as a support to the eyebrows. From an anatomical point of view the superciliary arches form a constituent part of the frontal bone, and their description could not be separated from that of the forehead, while the eyebrows belong to the hairy system (hair of the body, head, beard, etc.), which has been mentioned in the chapter on chromatic characters, and to the value of which we will return more especially when analyzing the complementary characteristic features of the face.

bombé) in cases where the verticalness of the forehead is combined with a certain rounding outward of the frontal bosses (plate 32, No. 2). The complete series presents itself under this form:

very receding—receding—intermediate—vertical— { *prominent or bulging.*

4. The two headings of dimension, *height* and *width*, like all the similar descriptive headings, without exception, are answered by the typical seriation already mentioned: *very little—little—medium—great—very great* (plate 31, Nos. 4 to 9).

5. Of course the receding foreheads are nearly always accompanied, or, more exactly, produced, by a great prominence of the superciliary arches, and the upright foreheads by a smallness of the same parts. So it is not so much the intrinsic, *anatomical*, volume of the superciliary arches which the heading in question has in view as the projection, the very characteristic protuberance, which great numbers of foreheads present when the eye of the observer passes downwards along the frontal profile (see for a type of *very large arches*, plate 32, No. 1. Other specimens in plate 31 are: Nos. 2 and 5, *small arches*; Nos. 1 and 6, *medium arches*; No. 4, *large arches*. See also plate 33: Nos. 1, 2 and 3, *small arches*; Nos. 4 and 5, *medium arches*; Nos. 6, 7 and 8, *large arches*, and No. 9, *medium arch*).

6. In certain cases it will be advantageous to distinguish between the *prominence of the arches*, which, as we have said, are directly above the eyebrows, and that of the *frontal sinuses*, which, when they are much developed, appear as a kind of osseous swelling on the median line above the head of the superciliary arches. (Compare from this point of view Nos. 1 and 3 in plate 32.) The simplest way of noting this peculiarity is to cancel the heading *arc.* on the card, and to replace it by the word *sinus* followed by the letter *g.*, the abbreviation for *large* [or great, Fr. *grand*].

7. Among the *peculiarities* there should be noted the rather infrequent cases where the profile of the forehead, without being bulging, properly speaking (as this qualification implies verticalness), nevertheless describes a pronounced curve. This character generally results, as may easily be seen, from the effacement of the superciliary arches combined, in a receding forehead, with a certain prominence of the frontal bosses (plate 32, No. 4).

SECTION B. DESCRIPTION OF THE SHAPE AND DIMENSIONS OF THE NOSE

8. The nose is the organ which, in man, contributes most to give to each face its individual character.

9. Its varieties, 1st, *in shape*, and 2nd, *in dimension*, present a great number of combinations, which current language has reduced into three or four types easy to recognize when their characters are well defined.

Unfortunately the intermediate forms, much more frequent than the typical ones, enter with difficulty into these divisions. The method of description hereafter presented permits, on the contrary, a rigorous definition of all imaginable cases.

I. Shape of the Nose

10. Let us in the first place say a few words on the parts of which the nose is composed.

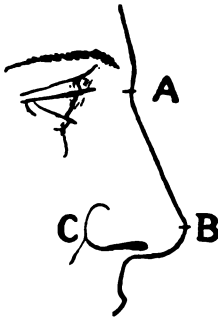


Fig. 26.

The *root of the nose* is that transverse *concavity*, A, more or less accentuated, which always exists at the top of the nose, between the eyes and beneath the base of the forehead. The upper part of the nose is hard and bony; it has a true skeleton formed by the nasal bones. The *wings of the nose* are its two lateral portions, which are limited below by the two openings of the nostrils and separated from the cheek by a groove more or less rounded and more or less pronounced.

The *tip of the nose*, B, is the point where the lobule begins to turn back upon itself. The *ridge of the nose* is the line of its profile, A B, from the root to the point.

The lower edge or *base of the nose* extends from the tip, B, to the point of attachment, C, of the nostril to the cheek.

11. In the profile of the nose there are distinguished: (1) the *concavity of the root*; (2) the *general form of the ridge* of the nose; (3) the *inclination of the base*.

12. 1st. *Concavity of the root of the nose*. This heading is answered by means of the words: **very small—small—medium—large—very large**, according to the size, that is, the **DEPTH**, of the depression formed by the profile of the root of the nose between the two neighboring parts, the forehead and the ridge of the nose (plate 32, Nos. 5 and 6).

13. 2nd, *General shape of the ridge of the nose.* Every form of ridge of the nose when seen in profile attaches itself to one of

the three types: *cave* (1); *rectilinear*; $\left\{ \begin{array}{l} \textit{convex}, \\ \textit{or} \\ \textit{humped}. \end{array} \right.$

In the [con]*cave* form, the upper part, which corresponds to the nasal bone, descends more or less obliquely in almost a straight line; then the lower part, which corresponds to the tip of the nose, projects outward in such a way that the line as a whole presents on the profile a [con]*cave* shape (plate 33, Nos. 1, 2, and 3).

In the *rectilinear* form, the ridge of the nose descends in a straight line from the root to the point (plate 33, Nos. 4, 5 and 6).

In the *convex* form, the ridge of the nose describes a convex curve almost uniform from the root to the point (plate 33, Nos. 7, 8 and 9).

14. The *humped* (or busked, Fr. *busqué*) nose is a variety of the convex nose. The upper portion of the bony part exhibits a strong and abrupt convexity, below which the rest of this bony portion becomes almost straight and continuous with the tip of the nose (plate 34, No. 3).

15. When the upper bony part presents a more or less marked projection, but the profile of the lower cartilaginous part, instead of continuing this curve as in the aquiline nose, or of taking a rectilinear direction as in the humped nose, bends inward, the shape of the ridge of the nose is called *sinuous* (plate 34, No. 9). It thence results that the direction of the line is convex above, and becomes concave below the bony portion, necessarily becoming convex again towards the point of the nose.

16. The *sinuous* nose should be considered as a variety of one of the three preceding type-forms, according as the line of the nose taken as a whole presents a *hollow*, a generally *rectilinear* direction, or an *ELBOW*. Thus the qualificative *sinuous* should always be preceded by one of the three terms *cave*, *rectilinear*, *convex* or *humped*. Example: *cave sinuous*; *rectilinear-sinuous*; *humped-sinuous*.

All the specimens in plate 34 are varieties, either *sinuous* or *attenuated*, of the corresponding types of plate 33.

(1) We call this shape *cave*, and not *concave*, to avoid all confusion with the third, called *convex* (abbreviatively *vx*).

17. 3rd, *Inclination of the base of the nose* (plate 33). It may be either *elevated* (Nos. 1, 4, 7), *horizontal* (Nos. 2, 5, 8), or *depressed* (Nos. 3, 6, 9). These words relate to the inclination of the free edge of the nostrils, from C to B (Fig. 26), and not to that of the line of the silhouette extending from the top of the upper lip to the tip of the nose.

18. Our description of the line of the nose seen in profile stopped at the point; the indication of the inclination of the base completes its contour.

Example: *Nose [con]cave with base elevated* (plate 33, No. 1); or for greater speed, *nose cave elevated*. Or again: *nose convex depressed* (plate 33, No. 9); *nose rectilinear horizontal* (plate 33, No. 5).

19. Although the use of two epithets together is indispensable, it must not be thence concluded that each of them is combined with equal frequency with every other. Certain combinations are much more commonly met with than others,

The [con]cave nose usually has an *elevated* base (commonly called pug nose), while the *convex* nose is either *horizontal* (aquiline nose) or *depressed* (parrot nose), etc.

On the other hand, a *concave depressed* nose is exceptional (plate 33, No. 3).

20. Recourse may be had, for the transitional forms between one type of nose and another, to the method of *parenthesis* and *underlinement* already indicated for the designation of the color of the eyes. The underlining will always represent the *accentuated* form and the parenthesis the form *little marked*, approaching to the average or median, that is, to the rectilinear in the line of the ridge of the nose, and to the horizontal in the inclination of the base (1).

21. The use of the parenthesis permits the restriction to strictly exact cases of the use of the median qualifications: *rectilinear* and *horizontal*.

(1) In copies of a signalment intended either for the public, or for administrative authorities not conversant with these technicalities, translate the parenthesis by the word slightly (Fr. *leg^t* for *légèrément*) and the underlinement by strongly (Fr. *fort^t* for *fortement*).

Thus No. 1 in plate 34 will be described as *cave elevated*; No. 2 as *(convex) elevated*; No. 3, *humped horizontal*; No. 4 *(cave)-sinuous elevated*; No. 5, *rectilinear-sinuous horizontal*; No. 6, *(humped)-sinuous horizontal*, etc.

II. Dimensions of the Nose

After having spoken of the *shape*, we have still to treat of that other element of every solid: the *dimensions*. It is important, for the clearness of the notation, that these two points of view should be distinctly separated.

22. The three dimensions of the nose are: its *height*, its *projection* and its *width*. The meaning of these expressions should be well understood.

23. The *height* is not reckoned along the ridge of the nose, as one might be tempted to do. It is the line included between the root of the nose and the point C in figure 26; one escapes thus the illusions of appreciation occasioned by drooping noses (with depressed base), which always seem longer than they really are, and by noses with elevated bases, which always seem short.

24. The *projection* (Fr. *saillie*) of the nose is the distance comprised between the point B, the most prominent in the ridge of the nose, and the middle point C of the transverse line uniting the points of attachment of the two wings of the nose (fig. 26).

25. The *width* is the greatest transverse distance comprised between these two wings.

26. The direct measurement, by means of a caliper, of the three dimensions of the nose would present certain manual difficulties; so the operator should content himself with indicating, on the third line, under the proper headings, the dimensions as they appear to the eye, without the aid of an instrument, using the words *little*, *medium* or *great*, to which in extreme cases there may be added the expressions *very little* or *very great*.

27. It would be an error to suppose that in the case of the nose the designation of the dimensions necessarily has less signaletic value than that of the shape. (Compare from this point of view, in plate 35 of the *Album*, a selection of noses matched in pairs and absolutely unlike in aspect although correctly noted as having the same kind of ridge and base).

28. The next plate (36) reproduces in tabular form the combinations, 9 in number, of the three degrees of height with the three degrees of projection, in a *uniform* nose, intentionally selected with an intermediary profile (rectilinear horizontal and of medium width). A final plate, the 37th, presents an analogous table for the ascending series of nasal heights combined with widths (1).

III. Peculiarities of the Nose (plate 38)

29. The *peculiarities* of the nose relate more especially to the *ridge line*, the *tip*, the *nostrils*, and the *root*.

30. The nose often exhibits, on a level with the upper third of the *ridge*, about two centimetres below the root of the nose, an olive-shaped swelling which, without making a projection on the silhouette of the nose seen in profile, may, when it is very pronounced, give to the nose a special characteristic. This should be noted under the head of peculiarities of the nose, by means of the abbreviated formula *ridge of nose flat* (plate 38, No. 1).

31. The expression *nose crushed* should be reserved for noses flattened as the result of an accident (No. 2).

32. We make mention also: *nose twisted to right* (No. 3) or *to left*; *nose tapering* or *pointed* (No. 4), *nose thick* (No. 5), qualifications which are applicable more particularly to the point or *tip of the nose*; *nose blotched* or *pimply*; (*Fr. couperosé*), etc.

33. Another *flat place* of triangular form is also observed sometimes on the tip of the nose. The two nasal cartilages on arriving at the point seem to divide into two branches; which

(1) The education of the eye on this point is a matter of such importance that we feel that we ought to give here some indications regarding the system of proportion used in the arts under the name of *canon*. A rule generally admitted is to give to the nose a height equal to the distance which separates the nostrils from the point of the chin, while an imaginary line passing through the two tear-channels (*larmiers*) should divide the face into two parts of equal height; hence the conclusion that the forehead, *augmented by the part of the skull seen from in front*, should be very nearly equal to twice the height of the nose. Every manifest exception to this rule reveals either a relative excess or a relative insufficiency in one of the three parts to be compared: *forehead, nose* or *jaws*.

Other relations of a still less precise kind have been established, taking the length of the eye as the common measure. Thus it has been said that the mean width of nose measures one eye-length, and that this same interval is found between one tear-channel and the other.

is expressed by the words *tip of nose flat*; or again, when each cartilage makes a distinct projection under the skin of the nose: *tip of nose bilobed* (No. 9).

34. The *partition* of the nose is the name given to the cartilage which separates one nostril from another. When this cartilage descends much below the lower edge of each nostril, the nose is called: *with partition exposed* (No. 7). This peculiarity is often met with in convex noses. It should be noted among the peculiar marks only when it is very pronounced.

There will rather seldom be occasion to mention the cases of *puffy nostrils* (No. 8), the opposite of which would be *nostrils very delicate* or *very mobile*, etc.

35. One will also be sometimes led to note among the *peculiarities* of the nose the cases of a *root of the nose* particularly *narrow* or *broad* (plate 32, Nos. 7 and 8), as well as those in which, owing to an abrupt and vertical descent of the nasal bones, the concavity of the *root*, ceasing to have any inferior limit, *descends very low* (No. 9).

36. This deformity of the nasal bones is sometimes accentuated to such a degree as to completely puzzle the observer as to the proper qualification to apply to the ridge line. No. 1 in plate 34 reproduces a case of this kind: the nose, at first evidently [con]cave along the nasal bones, describes a short convexity in its lower half, so that it might just as well be qualified as *cave* or as *convex*, according to the part considered.

37. In such cases, the observer should neglect details and consider only the general aspect, mentioning his doubts in a note under the head of sundry information. This profile, which however is very rare, might be designated by the expression *nose with S-shaped dorsal line*.

Approximation, and Limits of Possible Deviation

38. The series of terms describing the direction of the ridge-line of the nose present themselves in the following order, already mentioned:

Cave—cave—(cave)—rectilinear— { (convex)—convex—convex
(humped)—humped—humped

39. Each term in this progression may possibly be confounded, according to circumstances, either with the term that precedes it or with the one that follows it, without any fault on the part of the observer.

40. An error exists only when from one category one skips entirely over another. Thus (*cave*)—in parenthesis—otherwise speaking *slightly* [con] *cave*, may be confounded with *rectilinear*, but not with *slightly humped* or *slightly convex* (with the exception noted in § 37). In the same way the confusion of *cave*—underlined—with (*cave*)—in parenthesis—would constitute a mistake.

41. As to the class with sinuous ridges, their seriation is superposed on the preceding. Thus a *nose* (*cave*)—*sinuous* might be described, in a later observation, as *rectilinear-sinuous*, but not as *humped-sinuous*. Furthermore, every term of the *slightly sinuous*—(*sinuous*)—series is liable to be confused with the corresponding group of the *non-sinuous* series.

42. The series for the inclination of the base, presenting neither bifurcation nor superposition, is still more simple. It commences at the most elevated form and ends at the most depressed:

Elevated—*elevated*—(*elevated*)—*horizontal*—(*depressed*)—*depressed*—depressed

Thanks to the intermediate terms, created by the underlining and the parenthesis, it is difficult to confound *strongly elevated* with *slightly elevated*, or this latter with *slightly depressed*.

43. Similarly, as regards the dimensions, the confusion of two extreme qualifications is not possible; what has been termed *narrow*, for instance, in a first observation, may be qualified in a second as *medium*, but not as *broad*.

44. Thus, whatever may be the heading considered, the *divergences* of different examiners (we do not say the *errors*.) are limited within very narrow bounds, which may be precisely defined, on general principles, for each case taken separately. It is sufficient for satisfactory work to know by heart, in the ascending and descending order, the series of qualifications to be used for each heading.

Abbreviations

45. The employment of the following abbreviations gives more rapidity to the writing; moreover, the narrowness of the columns on the anthropometric card renders their use indispensable.

<i>rectilinear</i>	<i>r.</i>	<i>sinuous</i>	<i>s.</i>
[<i>con</i>]cave	<i>ov.</i>	elevated (Fr. <i>relevé</i>)	<i>rel.</i>
convex (dictated <i>vex</i>)	<i>vex.</i>	horizontal	<i>h.</i>
<i>humped</i> (Fr. <i>busqué</i>)	<i>busq.</i>	depressed (Fr. <i>abaissé</i>)	<i>ab.</i>

SECTION C.—DESCRIPTION OF THE EAR

46. The ear, owing to the many hollows and ridges which furrow it, is the most important means of identification in the human visage.

47. It is, in fact, almost impossible to meet with two ears which are identical in all their parts, and some of the variations of form which this organ presents appear to remain unmodified from birth until death.

And yet, principally on account of its motionlessness, which prevents it from participating in the play of the features, no part of the face attracts less notice; our eye is as little accustomed to observe it as is our language to describe it.

The descriptive formulary for the ear which we are about to give has been followed for several years at the Depot of the Prefecture of Police at Paris; but it must be admitted that the operation requires in practice a certain time (about five minutes for each subject).

48. So it is recommended in its entirety only in the signalments of those subjects, and particularly of *young persons under twenty-one years of age*, who, being suspected of concealing their true identity, are made the object of a request for special verification, without the aid of a photograph, in the central collection of Paris, which is the only city where the complete description of the ear of prisoners is always taken. Apart from these cases, the local operators are authorized to describe only those clearly extreme forms which by reason of their exceptional aspect are termed *anomalies*.

49. Hence there are two parts to this chapter: in the *first* the component elements of the external ear will be analyzed in all their details, and their corresponding descriptive vocabulary will be indicated; then, in the *second* (p. 174), the principal characters will be taken up again, with reference only to those forms which should be signalized in any and every case.

50. These two parts need to be studied one after the other, beginning with the first; but the second, that of the anomalies, is the only one which the operator needs to know by heart, *on the spur of the moment*, while he will do wisely, at the beginning, in those rarer cases where he has to describe the ear completely, to do so only with the book in his hand, re-reading the instructions, paragraph by paragraph, just as he is about to apply them, or later on, when he has become more expert, with the aid of the recapitulatory table on page 177.

I. Detailed Analysis of the Parts of the Ear

51. It is sufficient to describe the **ELEVATIONS** by which the **DEPRESSIONS** are bounded, to obtain, at the same time, an idea of the latter; the description will thus be shortened by half. The elevations are five in number:

52. I.—The **BORDER** of the ear, or helix, is the semi-circular eminence which, starting at A (fig. 27), in the middle of the central depression of the ear, called the [shell or] *concha*, above the auditory conduit, reaches the periphery and borders as with a gutter the two upper thirds of the ear.

53. II.—Where it ends commences the **LOBE**, a soft rounded protuberance which terminates the circumference of the pavilion.

54. We cite here, for convenience in memorizing, the *tragus*, which is not mentioned on the signaletic card. It is a little cartilaginous projection, flat and triangular, placed outside and in front of the auditory conduit, the form of which presents few individual variations; the *tragus* is more or less thrown forward, *pointed*, and sometimes even *bifurcated*.

55. III.—Opposite, and separated by the auditory conduit, is the **ANTITRAGUS**, a round eminence smaller than the *tragus* but much superior to it in signaletic value.

56. IV. Above, finally, are the windings of the anthelix, that we call abbreviately the **FOLD**, which, after ascending for about a centimetre, divides into two branches, the *superior* and the *median*, the latter coming to rejoin the helix above the ridge in which it originates.

57. The ascending, called the *superior*, branch of the anthelix limits at the rear the depression called by anatomists the *navicular* (that is, in the shape of a wherry or pirogue) *fossa* and in front the depression that we call the *digital fossa* (the intercrural of the anatomists). These two hollows are indicated in figure 27 by dotted lines: the navicular fossa opposite the letters D and C, and the digital fossa above the letter M.

58. Notice that the order of enumeration which we have followed, and which is that observed in the signalitic cards, to-wit: *border*, *lobe*, *antitragus* and *fold*, would allow the numerous outlines of the ear to be drawn without having, so to speak, to lift the pen, starting at the point A (fig. 27) and finishing at the point M (supposing the tragus to be omitted and a backward movement to be made for the superior branch of the anthelix).

This course is indicated in our figure by the alphabetical order of the capital letters separating each of the subdivisions, which we will now enumerate, describing at the same time the most characteristic variations of form (1).

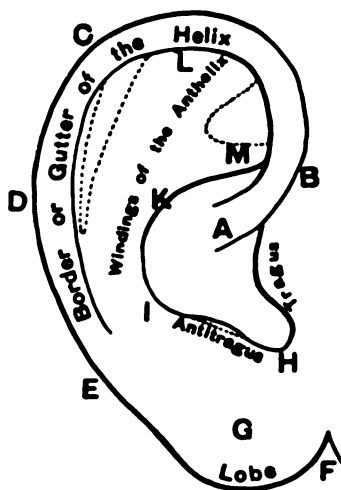


FIG. 27. PLAN OF THE EAR.

Border. A B C D E, divided into the *Original*, A B, *Superior*, B C, *Posterior*, C D, and *inferior*, D E, portions.

Lobule. E F G H, examined from the point of view of its contour, E F, its adherence to the cheek, F H, its model G and its Dimension.

Antitragus. H I, examined from the point of view of its inclination, its profile, its degree of *reversion* forwards and its Dimension.

Internal folds, separated into *inferior*, I K, *superior*, K L, and *middle*, K M, branches.

(1) We will observe here, once for all, that in this enumeration the names of the parts analyzed will be printed in *italics*, with the exception of their initial letter reproduced on the anthropometrical card to indicate the place for the entry, which initial will

59. I.—The **BORDER** may be analyzed into three portions: (1) the *Original ridge*, A B, (2) the *antero-superior* portion B and (3) the *posterior* C D E.

Each of these divisions may vary independently in dimension, that is to say, be *small*, *medium* or *large* (see plate 52, Nos. 1, 2 and 3). It even happens sometimes that the *Original* portion, A B, is completely lacking. This peculiarity is expressed by the word *nil*, while the entire absence of the *Superior* portion, B C, and of the *Posterior*, C D E, should be described by the more figurative term *flat*. At other times, the *Posterior* portion is more developed than the *Superior* (plate 52, No. 9), or inversely (plate 55, No. 6). Finally we shall see under the **LOBE** portion that the *final* part, D E, of the posterior border is sometimes so exaggerated that it continues across the lobe to the cheek (plate 58, No. 9).

60. Nothing is more characteristic than the irregularities of contour, enlargements or diminutions, which the species of gutter that we term the border of the ear presents in different parts. They are expressed on our cards by the alternation of the adjectives of dimension added to the heading. Thus the **BORDER** of No. 6 on plate 52 would be represented thus: *Original medium, Superior large, Posterior small*; that of No 12, which is equal and regular, would be described: *Original small, Superior large, Posterior large*; while the very exceptional contour of No. 9 would be expressed by the alternative adjectives; *Original medium, Superior nil, posterior very large*.

61. To the qualifications of dimension there is added (4), but for the posterior portion of the border only, the indication of the *degree of its openness*. Three degrees are distinguished: the

be distinguished from the rest of the word by being printed in a **bolder faced character**.

Conformably to the general rule laid down in the note on p. 150, these initial letters are themselves either in *capital* or *small* letters according to whether the answer requires a special series of qualifications or should be formulated by means of one of the terms of dimension, *small*, *medium* or *large*. The very small figures (1) (2) (3), etc., placed in parenthesis, indicate the order in which each initial heading comes on the card.

The very words to be written in response to the headings are printed in *bold-faced italics*, according to the rule followed throughout this volume. They are chosen in such wise that they can be entered by means of their initial letter alone, opposite each corresponding heading, which, as we have said, is itself represented by a simple initial.

In case of doubt as to the proper term to be used, answer, as in the case of the number for the eyes, by uniting with a hyphen the two possible initials, the most probable first.

open form, the *intermediate form* and the form at once *closed* and *adhering*. The first, represented by No. 10 in plate 52, needs no definition. The adhering form is characterized by the fact that the skin of the border, instead of covering delicately the hollow of the cartilage, forms a fleshy pad there which, seen from a distance, might appear hollow, but which a more attentive examination shows to be solid and formed by two skins which seem to be glued one against the other when it is touched with the hand. The border of the ear No. 12 belongs to this form.

62. II.—The **LOBE** or lobule (plate 53) should be considered under three relations:

(1) The *contour* of its free border E F, which may terminate in a point *descending* and attached along the cheek, or in a *square*, or finally in a rounded ellipsoid; this last form is subdivided in its turn into two, according as the ellipsoid is still partially adherent (contour *intermediate*), or is completely separated by an open space (contour *gulfed*).

(2) The degree of *adherence* to the cheek, F H, which may be so complete that the skin of the lobe is united to that of the cheek without forming the least furrow, the least wrinkle, at their point of junction, which is expressed by the word *blending* (Fr. *fondue*); or *partially separated*, which is expressed by the word *intermediate*; or, lastly, completely *separated* by a rounded furrow formed by the skin of the lobe itself. The adherence of a lobe *with gulfed contour* is, of course, always *separated*.

(3) The *model* of its antero-external surface G, which may be *traversed* by the prolongation of the helix, *smooth* or with a gently rounded *eminence*.

(4) Its *Dimension* in height, which may be *small*, *medium* or *large*.

63. III.—The **ANTITRAGUS** (plate 54) presents a general line of direction of which:

(1) The *inclination* may vary from *horizontalness* (the head being supposed in its normal position) to an *obliquity* of 45°, passing through an *intermediate* inclination.

(2) In relation to this line, indicated in the cut on page 163 by the dotted line H I, the *profile* of the antitragus may form a line with an upward (con)*cavity*, a very rare form (plate 56, No.

10), or *rectilinear*, or slightly sinuous, which is expressed by *intermediate*, or distinctly *projecting*.

(3) Finally the antitragus, and particularly its free extremity, should be considered with reference to its degree of *reversion* (or *turning over*) forwards: whence the three serial qualifications: *turned* (Fr. *versé*), *intermediate*, and *erect* (Fr. *droit*). The intermediate cases are naturally very much the more numerous. In the absence of an antitragus, respond to the heading for the reversion by a dash (—).

(4). Aside from all questions of shape, the antitragus may vary also in its absolute *Dimension*, *small*, *medium* or *large*.

64. IV.—The **FOLD**, or *winding of the anthelix* (plate 55), is divided into three parts, which we shall analyze in the order in which they present themselves to the observer as his glance passes upwards from the antitragus, to-wit:

65. The *inferior*, I K. It is considered only with reference to the degree of inclination, or of torsion, presented by the totality of the portion that may be termed the postero-inferior band of the ear, D E K I, included between the corresponding parts of the fold and the border.

In practice, the method of description is based on the degree of projection of the fold, I K, in relation to an *HORIZONTAL imaginary line* which, starting from the anterior face of the tragus, would pass from before to behind, *GRAZING* the postero-anterior part of the ear.

66. The windings should be noted as [con] *cave inferior folds*, when they are so effaced that the tangent in question, starting from the tragus and being directed in a horizontal direction toward the back of the head, is thrown in front of the anthelix on account of the very considerable projection of the posterior border (plate 55, No. 1).

In an *intermediate* inferior fold, the tangent starting from the tragus grazes at the same time the two ridges, anthelix and border (plate 55, No. 2).

In the fold called [con] *vex* the horizontal tangent touches the lower ridge of the anthelix only, leaving the corresponding part of the border one or more millimetres behind, towards the side of the occiput (plate 55, No. 3).

So then, it is less the inferior branch of the anthelix which is examined under this heading than THE GENERAL FORM which would be presented by a HORIZONTAL SECTION OF THE EAR ON THE LEVEL OF THE TRAGUS.

67. The anthropometrical employees of the identification service of the Parisian Prefecture of Police employ, for distinguishing the three terms of this series, a small instrument which



Fig. 28

it is easy to make oneself or which can be replaced if necessary by a pen-holder or any sort of a rigid rod. The instrument consists, in fact, merely of a thick brass wire 2 millimetres in diameter and 10 centimetres in length, having at 4 millimetres from the end a small projection 4 millimetres high made of wire only half as thick, soldered at right angles to the first.

68. The measurer, holding the instrument horizontally with his left hand, rests the extremity against the subject's tragus, the projection turned away from the auditory conduit, and with it draws the rod along until it just touches the cartilaginous band D E K I, without depressing it in any way. It is evident that with this instrument, as with the imaginary line spoken of before, the contact is and can be made in three ways only: (1) with the border alone (then the fold is termed [con]cave); (2) with the border and the anthelix at once (the fold is called intermediate); or (3) with the anthelix only (which constitutes the form called convex). See fig. 29, next page.

69. The second part of the FOLD is the *Superior* branch, K L, which is situated above the first. It is qualified as *nil*, *effaced*, *intermediate* or *accentuated*, according to the thickness and the more or less rounded projection which this elevation presents (1).

70. The branch K M, called the *median* or *original branch of the anthelix*, is seldom characteristic. For the cases which should be noted, see under the *Peculiarities*, page 173, § 96.

(1) The operator should note, in a reference to the *Peculiarities*, the infrequent cases where the superior fold itself divides into two or three branches.

71. **GENERAL FORM.** The following series of terms sufficiently answers the requirements of the description:

..... { *triangular* } — oval — round
 { *rectangular* }

72. In this enumeration the *triangular* and *rectangular* forms are placed one above the other to indicate that they may be easily confounded either with each other or with the adjacent form, the *oval*, which is the one most frequently met with.

73. It is evident that the indication of the general form of the ear can only be a more or less direct consequence of the morphological variations already described. Thus the triangular form

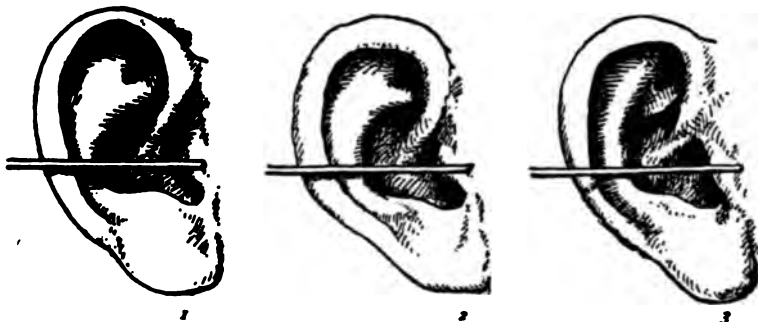


Fig. 29. THE FORM OF THE INFERIOR FOLD is revealed in these figures by the direction of the band of shadow thrown by the *guiding-rod*:

No. 1.—The ROD is contiguous with the shadow on the edge of the ear, and is separated from it by a millimetre of white on the internal fold (shadow and fold of *concave* form).

No. 2.—The shadow is thrown in a straight line on the two parts parallelly and close against the guiding ROD (shadow and fold of *intermediate* form).

No. 3.—The ROD touches the shadow on the internal fold and is separated from it sharply on the external border (shadow and fold of *convex* form).

generally results from the presence of a descending lobe combined either with a *flattened border* or with the *square supero-posterior* contour of which we shall speak further on. However, the concomitant presence of these qualifications (descending lobe and square contour) ought not to be regarded as necessarily implying the very characteristic triangular form, so that the mention of this latter will always be a useful complementary indication. In the same way the rectangular form is not seen except when there is an abnormal development of the lobe in a horizontal direction.

As for the round form, it often results from the separation of the upper part of the pavilion combined with a lobe small in dimensions and drawn forwards.

74. The **SEPARATION** (Fr. *écartement*) OF THE PAVILION (plate 55) is in inverse relation to the accentuation of the folds of the anthelix. The less these latter are developed, that is to say, the more *blunt* and effaced they are, the more the ear will be separated from the back of the head. Inversely, the clinging (Fr. *collée*) ear is never without a certain exaggeration of the inferior fold and especially of the superior one.

75. Nevertheless, in view of the important part played by the separation of the ear in the facial physiognomy, it has seemed necessary to note its degrees and modes **DIRECTLY**, without regard to the conclusions that might already be deduced regarding it from the degree of accentuation of the interior windings.

76. The pavilion as a whole, including the lobe, may be uniformly *separated* (Fr. *écarté*) from the back of the head, whence the form called *pedunculated*. At other times the separation is especially noticeable in the *superior*, the *posterior*, or even the *inferior* part of the pavilion; in this last case it has its seat in the lobe, which assumes a very peculiar form (plate 55, No. 12). Inversely, the whole pavilion, or one part only, may *cling* to the side of the head. The form *clinging above and separated below* is very characteristic.

77. When the separation does not seem exaggerated, either in one direction or the other, a dash should be placed after the heading relating to this point.

Peculiarities of the Ear (plates 57 and 58)

78. These may be connected: I, with the *border*; II, with the *lobe*; III, with the *tragus*, *antitragus* and *concha*; IV, with the *superior fold*; V, with the various *fosses*, *incisures*, and *depressions*, and VI, with the *mode of insertion* of the organ considered as a whole.

79. I.—*Peculiarities of the border*. The point indicated in figure 27 by the letter C, the position of which corresponds approximately to the junction of the superior part of the border with its posterior part, is frequently the seat of a small supplementary

cartilaginous development which is of great descriptive value. It was first noticed by the famous English naturalist Darwin, hence the appellation *Darwinian* given to this peculiarity. The following varieties are distinguished and are here enumerated according to their degree of extension.

(1) The simple lump, called the *Darwinian nodosity*, characterized by a callousness of the cartilage sometimes more perceptible to the touch than to the sight (plate 57, No. 1).

(2) The *Darwinian enlargement* (plate 57, No. 2), recognizable by a slight blunt swelling of the border, apparent to the eye, but exactly limited to the point C (for the enlargement of the border at other points should not be mentioned among the *peculiarities*, but rather under the special heading relative to the dimension of the border).

(3) The *Darwinian projection* denotes an increase of matter sufficiently pronounced to assume the form of a bracket or of a saw-tooth with a broad base: this is the most frequent form.

(4) The *Darwinian tubercle* indicates a very pronounced cartilaginous protuberance, round and isolated, and more or less white and pearly, so delicate is the skin that covers it. This peculiarity is rarely met with and need scarcely be looked for except in ears with a large and closed border.

80. The same point or its vicinity may be the seat of an *anomalous deficiency* which is often combined with the presence of the Darwinian projection. It is registered by means of one of the following expressions: *notch in the supero-posterior border*, or more simply *notched border* (plate 57, No. 5).

81. The *notched* (Fr. *échancrée*) border is often associated with an abrupt change of direction of the posterior border in relation to the superior one. Generally it is somewhat difficult to fix an exact boundary for these two borders, which are continuous with each other, forming a rounded contour. On the contrary, in the ears of which we are about to treat the superior border becomes more or less rectilinear and horizontal, and sometimes even ascending, while the posterior is distinctly separated from it, taking at once a vertical direction. As a result, the contour of the top and back of the ear, instead of describing the arc of a circle, profiles itself in a *right angle*, and sometimes even an *acute angle* if the superior border is ascending instead of horizontal.

82. This very characteristic species of ear, which resembles the ear of the fauns of Greek mythology, will be described by the words *postero-superior contour square*, if it is more or less in a right angle; and as *posterior* (or *postero-superior*) *contour acute-angled* if the *ascending* direction of the superior border should render the profile more acute, more pointed (compare Nos. 6, 7 and 8 of plate 57).

83. The ear with an *acute postero-superior contour* (No. 7) is distinguished from that with an *antero-superior contour* equally *acute* by the fact that the point in the contour is situated much nearer the cheek.

84. Finally, we qualify as *biflected* (Fr. *bicoudée*), i. e., *twice bent*, the ears whose border curves squarely a first time on the side next the cheek, and then joins the posterior border at a right angle (No. 9).

85. The contour of the ear can be made the object of reliable comparison or description only on photographs taken in the same position and, especially, in profile. Thus, there may be seen in Nos. 11 and 12 of plate 57 a photographic enlargement of one same ear, 1st, from a profile pose, and 2nd, from a full face pose. The first picture shows clearly that the ear in question has a *circular* and *regular* superior contour, while the front view taken by itself might have conveyed the impression that it was *acute-angled*.

86. We may notice further the *rumpled* (Fr. *froissée*) *border*, which is observed only on ears with broad hems, in which it is frequently combined with an *acute superior contour* (see No. 10); the *border jagged* (Fr. *déchiquetée*), *irregular*, or *frozen* (that is, showing scars of frost-bites); finally a part of the border (specify which) may be *cut* or *amputated*, as the result of an accident or a fight, etc.

87. II. — *Peculiarities of the lobe*. The lobe is often *pierced* for ear-rings. These latter, especially in the case of women, sometimes cause a complete vertical section of the lobule, which is expressed by *lobe slit*.

88. In place of the hollow of greater or less depth which in one case out of three crosses the whole width of the lobe, and which is described under the heading *model of the lobe*, there will sometimes be observed a kind of small dimple (or *fossette*) in the

form of a comma, which, starting from the edge adjoining the cheek, disappears some millimetres further across the lobe; this is expressed by the words *lobe dimpled* (or *lobe with fossette*).

89. Lastly, the general inclination of the lobe will sometimes give occasion for interesting remarks. Thus one should take note of well-defined cases of an *inclination oblique-internal* or *oblique-external* and the cases of *anterior torsion* of the lobe (plate 57, Nos. 14, 15 and 16).

90. III.—*Peculiarities of the tragus, the antitragus and the concha.* The tragus sometimes presents two tubercles instead of a single projection, hence the expression *tragus bifurcated*, of which we have already spoken in paragraph 54 (see plate 58, No. 1).

91. Sometimes the antitragus fuses itself with the starting point of the border, which in such a case it is shorter and more exact to call *helix*, by means of a supplementary ridge which crosses the concha [the hollow or *shell* of the outer ear], whose cavity is thus partially filled, which is expressed by the formula: *antitragus fused with helix*.

92. This anomaly is often observed with the *concha partially flattened* (Fr. *repoussée*) or pressed outward, whence the various formulæ: *concha flattened behind antitragus*, *concha partially* (or *entirely*) *flattened*, etc. (plate 58, Nos. 2 and 3; see also plate 32, No. 7).

93. One should be careful not to confuse the flattened concha with the *concha merely traversed* by a continuation of the original ridge of the helix, which then goes on to unite itself with the *inferior fold* behind the antitragus (see plate 56, No. 21).

94. We notice, regarding the concha, when occasion arises, the *concha very broad* and the *concha very high*. This latter peculiarity never appears without a large space between the two adjacent original ridges of the helix and the anthelix.

95. Finally there will sometimes be occasion to note the well-defined cases where the original ridge of the anthelix is either remarkably horizontal or remarkably oblique.

96. The *original ridge of the helix* is always situated just above the auditory canal; it is of all parts of the ear the one whose position changes the least. Every variation in the height of the concha implies then a corresponding variation in the interval between the two original ridges, a peculiarity which it is sometimes advantageous to express directly, hence the formulæ: *original ridges of helix and anthelix contiguous* (plate 57, No. 13) or *widely separated* (plate 57, No. 14).

97. IV.—*Peculiarities of the superior fold* (plate 58, Nos. 5, 6, 7, and 8). We have already had occasion, in speaking of the *degree of accentuation of the WINDINGS*, to mention in a note (page 167) the existence of a superior fold with a *double, triple, or even quadruple* branch; this is a remark of great signaletic value. Care should be taken not to confound it with the *hematoma*, a medical term serving to designate the species of hard swellings which partially fill one or more of the cavities of the ear and which result from the reabsorption of an abscess. This peculiarity is frequently met with in the ears of prize-fighters.

98. V.—*Various remarks*. The *digital fossa* should be mentioned only in the rare cases where it is very accentuated, and where it attracts attention by the distinctness of its edges cut as it were *perpendicularly*.

99. The *navicular fossa* is necessarily absent in ears with a flat posterior border (plate 57, No. 10). This peculiarity should be mentioned only when the description of these parts might leave some doubt as to the deductions to be drawn regarding the fossa.

100. We call *post-tragian fissure* (1) the small vertical groove which in many ears, after separating the antitragus from the ascending fold of the anthelix, descends thence, when greatly accentuated, to join the extremity of the navicular fossa (plate 58, No. 11). Although these *accentuated post-tragian fissures* are necessarily accompanied, if not caused, by an antitragus with a projecting profile, the mention of this peculiarity will be useful to complete the description of the ear, especially for the drawing up of the *verbal portrait*.

(1) By abbreviation, in place of *post-antitragian*.

101. The post-tragian fissure must not be confounded with the inter-tragian canal, which exists in all ears in front of the auditory conduit, between the two tragus, and the form of which is directly connected with that of the antitragus (compare from this point of view Nos. 13 and 14 of plate 58). There will sometimes have to be noted cases of a *very narrow inter-tragian canal* (plate 58, No. 12).

102. VI.—*Abnormal implantation of the ear*. Sometimes ears will be observed whose upper half is thrown backwards, while the lower half, and especially the lobe, projects forward. This peculiarity is expressed by means of the formula: *oblique-anterior insertion of pavilion*; the reverse is qualified as: *vertical insertion of pavilion* (plate 58, Nos. 14 and 15).

II. Recapitulation of the Characteristic Forms of Ear which should be Described in All Cases (plate 56)

103. **BORDER**. The origin of the border A B (1), when it is much accentuated, forms a very characteristic supplementary ridge, which completely *traverses* the concavity of the concha, dividing it into separate depressions. This anomaly is indicated by writing after the initial O the letters *trav.* (plate 56, No. 12).

104. The *Superior*, B C and *Posterior*, C D E, parts of the border constitute a signaletic feature worthy of being noted when they are either very small or even flat (plate 56, Nos. 1 and 3), or else very unequally developed in relation to each other, as in No. 9. These peculiarities are expressed by writing the word *flat* (Fr. *plat*, abbreviation for *aplatis*, flattened), or *t. p.* (abbreviation for Fr. *très petit*, very small), after the initials corresponding to the absent or very little developed parts of the border, and the letters *t. g.* (abbreviation for *very large*), after those which have an abnormal development. The border at once *large* and *adhering* throughout is equally characteristic (plate 56, Nos. 2 and 4).

(1) When not otherwise specified, refer to fig. 27 for the boundaries of the parts designated by the capital letters A B, B C, etc. It will be noticed that the abbreviations for anomalies hereafter given are formed according to the rules usually followed in such cases, while in the preceding pages devoted to the more complete description we had recommended the use of the initial of the word only, in order that, in embarrassing cases, room might be made for the juxtaposition of two initials.

105. **LOBE.** The lobe should be successively examined in relation to its *contour*, its *model* and its *Dimensions*. Note the *descending* form, *desc.* (plate 56, No. 5), of the *contour*, and the *gulfed* contour, *gf.* (same plate, No. 6). The *model* of the surface of the lobe is characteristic when it is deeply *traversed*, *trv.*, by a channel, or when it forms a gently rounded *eminence*, *em.* (plate 58, Nos. 13 and 14). In regard to the *dimension* of the lobe, it goes without saying that only the extremes should be noted: *very small* and *very large*. In case of the complete absence of the lobe, the heading D is followed by the word *nil*

106. **ANTITRAGUS.** Special attention must be paid, as regards the antitragus, to the *horizontal inclination* of the line H I, to the forms [con]cave or *rectilinear* of its *profile*, and its *turning* (Fr. *versement*) outwards from the ear. In the not infrequent cases where the antitragus is *absent* or very little developed, the heading of dimension should be followed by the word *nil* (plate 56, Nos. 9, 10 and 11).

107. **FOLD.** The *inferior fold* with a *concave* horizontal section will in this abbreviated description be distinguished from that with a section *convex to the eye* WITHOUT THE AID OF AN INSTRUMENT, but following the same principle involved in the method of observation prescribed for the complete description. The expression [con]cave will hence be applied only when the ear is manifestly hollow in its lower half, and that of [con]vex only when the ear is depressed and lies against the side of the head in such a manner that THE POSTERIOR BORDER OF THE ORGAN CEASES TO BE VISIBLE IN A FULL-FACE PHOTOGRAPH (plate 56, Nos. 13 and 14).

108. As for the *superior fold*, it should be mentioned only in case either of complete absence or of exaggerated development. Its peculiarities of formation will hardly need be considered except in determining the difference between two ears whose other parts are more or less similar. From this point of view compare Nos. 15 and 16 of plate 58.

109. **PECULIARITIES.** The instructions relative to the *separation* and the *peculiarities* of the ear are the same, whether for the full or the abridged description. As for the other headings, ONLY THE CLEARLY CHARACTERISTIC FORMS SHOULD BE NOTICED IN THE LATTER.

SECTION D.—NOTATION OF BUILD

110. The build, or *corpulence*, signifies the general volume of the body in proportion to the height. It should be determined by the *width of the shoulders* and the *girth* (or distance around the stomach).

111. Each of these points is covered by one of the terms of the typical series: *small*, *medium* and *large*.

The width of the shoulders is written after the heading **shoulder-breadth** (Fr. *carrure*), immediately following the word *width* (Fr. *largeur*, abbreviated *L^r*). As regards the inclination of the shoulders (letters *i^s* on the card), see page 203, §§ 116 and 117.

LIST OF ABBREVIATIONS of the Morphological Qualifications of Each Part of the Hair

Border	Nil <i>nl</i> Small <i>p</i> Medium <i>m</i> Large <i>g</i> Very large <i>tg</i>	Flat <i>fl</i> Small <i>p</i> Medium <i>m</i> Large <i>g</i>	1st. Posterior its dimension Flat <i>fl</i> Small <i>p</i> Medium <i>m</i> Large <i>g</i>	2d. Its degree of opening Open <i>o</i> Intermediate <i>i</i> Adhering <i>a</i>
Lobe	Descending <i>d</i> Square <i>g</i> Intermediate <i>i</i> Galled <i>gf</i>	Bleeding <i>f</i> Intermediate <i>i</i> Separated <i>a</i>	Model Traversed <i>t</i> Intermediate <i>i</i> Smooth <i>m</i> Eminent <i>e</i>	Dimension Very small <i>tp</i> Small <i>p</i> Medium <i>m</i> Large <i>g</i> Very large <i>tg</i>
Antitragus	Horizontal <i>h</i> Intermediate <i>i</i> Oblique <i>b</i>	Profile [Con]cave <i>c</i> Rectilinear <i>r</i> Intermediate <i>i</i> Projecting <i>a</i>	Reversion Turned <i>v</i> Intermediate <i>i</i> Erect <i>d</i>	Dimension Nil <i>nl</i> Small <i>p</i> Medium <i>m</i> Large <i>g</i>
Folds	[Con]cave <i>c</i> Intermediate <i>i</i> Convex <i>v</i>	Superior Nil <i>nl</i> Effused <i>ef</i> Intermediate <i>i</i> Accented <i>ap</i>	General form Triangular <i>tri</i> Rectangular <i>rec</i> Oval <i>ov</i> Round <i>rnd</i>	Separation Superior <i>sup</i> Posterior <i>post</i> Inferior <i>inf</i> Total <i>total</i> Medium <i>m</i>

CHAPTER III.—MORPHOLOGICAL CHARACTERS WHICH HAVE
NO SPECIAL HEADINGS ON THE SIGNALNETIC CARD

(Complementary characteristic traits)

A.—Complementary features of the profile. B.—Complementary features of
the face. C.—General characters and sundry information.

GENERAL PRINCIPLES

1. The paragraph for characteristic features is intended to complete the descriptive part of the signalment. We range under this chapter: the *description* of the *lips* and *chin*, the *general contour* of the head (profile and face), the various modes of *implantation* of the *hair*, the *beard* and the *eyebrows*, the *shape of the eyelids*, the *form* and *size* of the *eyeball* and the *orbit*, the *mouth*, the *wrinkles*, *furrows* and *rictus* of the face, the *expression* of the *physiognomy*, and also various information relative to the *general aspect* of the subject: *dimension of the neck*, *slope of the shoulders*, *general attitude* and *mien*, *quality of the voice*, *foreign* or *provincial accent*, etc., characteristics which are all more or less liable to be modified under the influence of the will or of education, of age, fashion, the cutting of the beard and hair, the loss of the teeth, increasing or decreasing fleshiness, or even the transient expression of the feelings, etc.

2. It is evident that it would have been practically impossible, without overloading the cards beyond measure, to provide for all the more or less signalnetic features just mentioned special headings analogous to those that the rules of a systematic analysis had indicated to us for the forehead, the nose and the ear.

3. Moreover, the smallness of the space reserved on our cards for the recording of these numerous characters shows the necessity of a rigorous selection. It is useless to remark, for instance, that a certain face is *oval*, or a certain mouth *ordinary*; while a

round or long face, a mouth with drooping corners, etc., when these qualities are very pronounced, should be specially mentioned, unless some still more unusual exaggeration of other parts, *eyeball, eyebrows, chin, etc.*, should relegate them to the second rank.

4. **It is these distinguishing features, to the number of two or three at most, that should be written by themselves in the paragraph of characteristic traits, eliminating, of course, those among them which have been already placed under the permanent headings: forehead, nose, or ear.**

5. The method of observation and description previously employed will still be followed, at least in its general outlines. It will be necessary, as before, for us to establish the **SERiation** of the qualifications to be employed, and, with this aim, to analyze separately the form and the dimensions. When once this distinction has been clearly defined specify if possible the emplace-ment of the organ under consideration, that is to say, its degree of straightness, or obliquity, or separation, or projection in relation to surrounding points.

6. But while in the preceding chapter the attributes of each part were divided into as many paragraphs as was necessary to make the answer easy, and the presence of a heading printed on the card, which demanded a response, was a protection against forgetfulness, the taking of the complementary characteristic features, and the selection of those which are to be noted, must be made *im-promptu*, and without any formulated guide before the eyes, after the period of apprenticeship has once been passed.

7. In the vocabulary of the complementary features which we are about to give, we shall generally omit to mention the *medium* term (or that *intermediate* between the two extremes), which, according to the rules just indicated, **should not be noted**. But it is evident that any examiner who might need it for a more complete description, such as that in use for *the verbal portrait*, for example, will always be able to ascertain its place in the series and to supply it by the word agreed upon.

8. The suppression of the headings has as a further consequence the optional use of *synthetic terms*. We thus designate the qualifications which embrace several attributes at once, such, for in-

stance, as the expression parrot-nose, employed to designate a greatly projecting nose with a convex depressed profile. If it is difficult to always use these terms in a strictly appropriate way, they have the advantage of being at once short and figurative. So their use, though incompatible with the analytical method of the printed headings, becomes advisable to a certain extent in the paragraph devoted to the complementary characteristic traits. A list of them will be given at the end of each chapter, under the title of synthetical expressions.

9. The preceding generalities have shown the beginner what significance should be attached to the heading of *characteristic traits*; they should suffice provisionally to enable him to respond to it in an almost satisfactory manner. The much more detailed explanations upon which we are about to enter in analyzing the human face and the general appearance, part by part, should be read and studied only at the third or even at the fourth reading of the book, after having acquired a profound theoretical and practical knowledge of all the other chapters. It would be an error of judgment on an officer's part to postpone the actual practice of anthropometrical signalment until after chapter III has been completely mastered. He would run the risk of losing both his interest and his time. But this same study, taken up at some later period, a little at a time, with a mind in repose, will soon enable him to make interesting observations on the countenance of his subjects, and will develop in him all the qualities of a physiognomist.

SECTION A.—COMPLEMENTARY FEATURES OF THE PROFILE

I. Lips. II. Chin. III. General Contour.

I. The Lips (plate 39)

10. The lips, viewed in profile, should be examined in relation to:
- (1) The *absolute height of the upper lip* from the base of the nose to the mouth, expressed by: $\left\{ \begin{array}{l} \textit{naso-labial height little,} \\ \textit{naso-labial height great.} \end{array} \right.$
 - (2) The *prominence of one of the two lips* in relation to the other, expressed by: $\left\{ \begin{array}{l} \textit{upper lip prominent,} \\ \textit{lower lip prominent.} \end{array} \right.$
 - (3) The *width of the smooth, rosy border* which they show on the outside, expressed by: $\left\{ \begin{array}{l} \textit{lips without border,} \\ \textit{lips with wide border} \end{array} \right.$ (see also plate 42, No. 5).
 - (4) Their *absolute thickness*, expressed by: $\left\{ \begin{array}{l} \textit{lips thin,} \\ \textit{lips thick.} \end{array} \right.$

11. These two latter qualifications sometimes apply separately to one of the lips only. Example: *upper lip very thin; lower lip with wide border.*

12. When a large border is combined with a lack of adherence against the teeth, the *upper lip* is termed *protruding* (Fr. *retroussée*) and the *lower lip* *pendant* (plate 39, Nos. 8 and 9).

13. Seen from in front the upper lip is always more or less depressed in its median portion by a slight furrow (Fr. *sillon*) descending vertically from the partition of the nose; when this is very accentuated it is expressed by: *upper lip with median furrow* (plate 39, No. 7). The lower lip sometimes presents an analogous depression, but less pronounced.

14. Permanent traces of old chaps (Fr. *gerçures*) badly healed may often be observed on one lip or the other, whence the peculiarities noted as: *scar of chap on upper or lower lip*. Finally, the median portion of the upper lip may show a *cicatrix of the operation for hare-lip* (Fr. *bec de lièvre*), which may be recognized by the presence of two deep curved and vertical scars combined with a great narrowness of the lip in these places.

15. *Synthetic expressions.* The expressions *blubber-lipped* (Fr. *lippu*) and *blubber-mouthed* are applied to mouths with thick lips the lower of which is pendant.

16. The act of advancing the lips and at the same time bringing them together is described by the word *pouting* (Fr. *faire la moue*), which may always be employed in the paragraph of characteristic features to denote either a permanent form or merely an habitual expression of the face. The inverse is expressed by *compressing the lips* (Fr. *pincer les lèvres*). (Refer to the section *mouth*, page 197, for the characteristic features of the lips seen from in front.)

II. The Chin (plate 40)

17. Seen in profile the chin varies in regard to:

(1) *The general inclination* of this part of the silhouette, whence the two extreme formulæ (1): $\left\{ \begin{array}{l} \textit{chin receding}, \\ \textit{chin projecting}. \end{array} \right.$

(1) We understand by *receding* chin one the line of whose profile is oblique from front to back and from above downward, and by *projecting* chin one that is oblique from back to front.

(2) The *form of the ball* [or fleshy protuberance of the chin]: { *chin without ball* (or *flat*),
 { *chin with large ball*.

(3) The height, taken vertically from the line of the mouth to the point of the chin: { *chin high*,
 { *chin low*.

18. Seen from in front, the chin may present three peculiarities worthy of remark:

(1) The *exaggeration of the horizontal supramental furrow*: thus we call the curved horizontal line, convex above, from 2 to 3 centimetres in length, which in some subjects separates in a very distinct manner the chin proper from the base of the lower lip.

This peculiarity should be noted in these terms: *supramental furrow very deep*; when, however, the accentuation of this furrow is caused principally by the exaggeration of the ball it is sufficient to note this latter character, which almost necessarily involves the other.

(2) The *central dimple* (or *median fossette*) which characterizes a certain number of chins with prominent balls. Sometimes the *dimple*, instead of forming a symmetrical circular hollow in the middle of the ball, is lengthened upwards and downwards, whence the expression *dimple elongated*.

This latter when much exaggerated may divide the extremity of the chin into two lobes, whence the abridged expression *chin bilobed*.

(3) The *fleshy cushion* which is observed in obese persons and which has received the characteristic name of *double chin*. The supramental furrow described above must not be confounded with the submental furrow which bounds the chin underneath, and is always very apparent in subjects with a double chin.

III. General Contour of Head seen in Profile (plate 41)

19. INT. PROGNATHISM and ORTHOGNATHISM. The prominence of the lower part of the face, and more particularly of the *upper jaw*, including the part of the skeleton which supports the base of the nose, has received from anthropologists the name of *prognathism*.

The negro race furnishes the most pronounced type of prognathism (plate 41, No. 1), and it is especially with a view to their

description that the term has been compounded from two Greek words: *pro*, in front, and *gnathos*, jaw.

20. But the expression can also be applied with the greatest appropriateness to the bony formation of the profile of many Europeans, if one is careful to limit its significance to the advancement of the median portion of the face: the upper maxillary, and part of the bony structure contiguous to the wings of the nose (superior prognathism of the anthropologists, plate 41, No. 2).

21. In the case of negroes, the bony prognathism is complicated and made more apparent by a considerable thickening of the lips. Now it is important to clearly separate these two aspects, and we have indicated above that the thickness of the lips should receive a special analysis and notation.

Thus, supposing that we have to describe a subject whose skin is white, but whose external and internal conformation resembles that of a negro, the notice of characteristic traits should read thus: *very prognathic; lips very thick; chin receding*. If the subject in question were a real negro, with black skin, the indication *negro type* on the dotted line of the DESCRIPTIVE INFORMATION would replace advantageously all other description (see page 151, § 83).

22. The inverse of prognathism is *orthognathism* (from *orthos*, straight and *gnathos*, jaw. Profiles of this type are characterized by the retreating of the upper maxillary. The general line of the profile, leaving out the nose, is straight and vertical. In cases where this line becomes inwardly oblique, replace the term orthognathic by the expression *face inclined inward*.

23. We would call attention to this point, that the term *prognathic* should be employed on our signalments only for the designation of the prominence of the whole upper jaw; while it will be necessary to resort to the term *naso-prognathic* to express a projection limited to the bony parts above, which support the base of the nose. In the great majority of subjects, when the two jaws are tightly closed and the large molars above and below are fitted together, the *upper* incisors are in advance of the *lower* and partially conceal them. This arrangement is evidently so much the more apparent as the upper jaw is more advanced, that is to say, as the *naso-prognathism* becomes more pronounced. In subjects,

on the contrary, in whom, when the teeth are set, the lower incisors entirely conceal the upper ones, the latter are so much the more pressed backward as the first are advanced.

24. This formation should be indicated by the expression, **lower jaw prominent** (popularly, jimmy-jawed), which will then imply, without any necessity of a separate mention, a greater or less accompanying prominence of the corresponding lip (1).

This peculiarity assumes a great signaletic value in cases where it is combined with orthognathism (see plate 60 a, Nos. 3 and 4).

25. 2nd. We would say a word also in regard to the *Greek or classic profile*. It is characterized by the combination of a rectilinear horizontal nasal profile (with the three mean dimensions) with a root of the nose having a concavity but slightly marked, that is, of *very little* depth, and a forehead whose line of inclination is a prolongation of the ridge of the nose.

This peculiarity may be briefly expressed by the formula: **fronto-nasal profile rectilinear** (plate 41, No. 6).

26. The inverse form consists in the combination of a vertical forehead with a nose whose ridge projects strongly from the root to its extremity (the consequence either of a pronounced prognathism or of a greatly projecting nose with an elevated base). This conformation, the description of which is partly included in that of the forehead and the nose, should receive special mention only in the preparation of the *verbal portrait*; the synthetic expression **fronto-nasal profile angular** might be reserved for it (see plate 35, Nos. 2 and 6).

The normal form (midway between the rectilinear profile and the angular), which, of course, will never need to be mentioned, is characterized by a direction nearly parallel (but not constituting a prolongation of one into the other) of the nasal and frontal profiles.

27. We have still to note the **semi-lunar profile**, which results from the coincidence of a curved and rather receding forehead with a convex nose and an equally receding chin, in such

(1) It will be noticed that the *projecting* chin is distinguished from the *prominent* jaw, in that the first qualification implies only an *oblique-anterior* direction of the profile while the second denotes the general advancement of the whole jaw without regard to the direction of the obliquity of the line of the chin (see note on p. 181).

wise that the entire profile, taken as a whole, would be tangent to an arc of a circle described by taking the tragus as a centre (see among others plate 41, No. 3; plate 40, No. 1; and plate 33, No. 9).

28. 3rd. THE PROFILE OF THE SKULL, PROPERLY SPEAKING. To complete the description of the profile, we should say a word of the cases where the height of the skull above the auditory orifice departs from the mean either in one direction or the other, hence the two phrases: $\left\{ \begin{array}{l} \textit{skull low,} \\ \textit{skull high.} \end{array} \right.$

29. The degree of backward projection of the occiput may also give rise to some remarks of more value, it is true, in the *verbal portrait* than on the anthropometrical card where they would be to some extent a repetition of the measurement of the length of head.

In fact, individuals with a small cranial length almost necessarily possess a *flat occiput*, while subjects with a great length of head present, other things being equal, a *bulging occiput*.

30. 4th. SPECIAL MALFORMATIONS. Finally we would mention some cranial anomalies, either natural or artificial, which are likewise signaletic only when well marked.

A very small length of the head combined with an abnormal elevation of the cranial arch (the *acrocephaly* of anthropologists) may be designated synthetically by the expression: head *shako-shaped* (Fr. *en bonnet à poils*, i. e., "like a bear-skin cap"), with reference to the celebrated head dress of the grenadiers of Napoleon I (plate 41, No. 7).

31. The term *keel-shaped head* (Fr. *tête en carene*, scientific term *scaphocephalic*) may be applied to the form, almost the inverse of the foregoing, which results from an excessive antero-posterior elongation of the skull combined with a great narrowness, especially at the summit; which gives the cranium, seen from above, a form somewhat suggesting that of a ship turned upside down, with the keel in the air (plate 41, No. 8).

Finally there will be designated as the *pouch-shaped head* [Fr. *t. en besace*, called by anthropologists *cymbocephalic*] a cranial form resulting from an artificial deformation still practiced in our day on the heads of new-born infants in certain parts of France

(especially around Limoges and Toulouse) and other countries. The heads which have been so treated are easily recognized in profile view by their receding forehead, disproportionately prolonged, and by the projection of their occiput (same plate, No. 9).

SECTION B.—COMPLEMENTARY FEATURES OF THE FACE

I. General Contour of Head seen from in Front (plate 42)

33. The general form of the visage results from the apparent relation between its height and its width. The intrinsic height sufficiently appears from the sum of the dimensions indicated in the headings for the *forehead* and the *nose*, completed, when necessary, by the indication of the height of the chin. The factors on which the width depends are, besides the forehead, the prominence (or the effacement) of the cheek-bones and zygomata (1) and the openness (or the narrowness) of the angles of the lower jaw, appreciated beneath the ears.

34. A narrow forehead combined with a broad face and especially a very broad jaw produces the *sugar-loaf* or *pyramidal* visage (plate 42, No. 1); while the inverse type, which is termed *top-shaped visage*, results from the combination of a wide forehead with a narrow face (same plate, No. 9). Finally the association of widely separated cheek-bones with a forehead and lower jaw equally narrow produces the *lozenge-shaped* and *round* forms (same, Nos. 2 and 3).

35. Thus the expressions *pyramidal*, *lozenge-shaped*, *face round*, *square*, *oval* (or normal type) and *top-shaped* constitute a series applicable to the cases where there is occasion to note the general form of the visage seen from in front, including the forehead.

36. Instead of considering the general form of the countenance it is often simpler and more characteristic to confine one's attention to the determining cause and to note: *lower jaw* (or *zygomata*) *much separated* (plate 42, Nos. 7 and 8); or better still: *skull* (or cranium) *very large*, *cheek-bones receding*, *jaws narrow* (plate 42, No. 9), etc.

(1) *Zygoma* is the name applied to the osseous band or area which extends from the cheek-bone to just above the auditory orifice.

When these two latter characteristics appear together, it is sufficient to note abbreviatively, according to the case: *face wide* or *face narrow below*.

37. Sometimes, again, the predominating characters to be indicated will be those of *face full* or *thick*, *face bony* or *thin*.

38. The form of the visage is, however, a feature which is very changeable. Children, who generally have full cheeks and abundant hair, nearly always have round faces. But the dropping out of the hair, which often precedes adolescence, lengthens the countenance by appearing to elevate the forehead. The arrival of the beard soon produces a new modification in the same direction, which may be still further exaggerated by a change in the fleshiness of the subject or by the loss of the large upper molars, etc. (plate 59a and 59b).

II. Nature, Abundance and Mode of Insertion of the Hair

(plate 43)

39. Besides its shade, the hair may be the subject of remarks relating: (1), to its nature or *degree of undulation*; (2), to the *manner of its insertion on the forehead*; (3), to the *abundance of its implantation*.

40. 1st. The DEGREE OF UNDULATION is indicated by the words: *hair straight*, *wavy*, *curly*, *frizzly*, *crinkly* and *woolly* (plate 43, Nos. 1, 2 and 3).

"The *straight* (Fr. *droits*) hair (a character of no signaletic value) needs no definition; it is *coarse* or *fine*, *stiff* or *supple*. The hair is *wavy* (Fr. *ondés*) when it describes long, undulating curves; *curly* (Fr. *bouclés*), when beyond a certain length it curves back on itself and forms flexible rings, in general rather large and incomplete; it is *frizzly* when it forms, throughout its whole length, rings smaller and less supple than the preceding." (BROCA.)

41. *Crinkly* hair (Fr. *crêpus*) differs from merely frizzly hair in that its rings are still smaller and twisted together.

42. *Woolly* hair (Fr. *laineux*), of which the negro race offers the most pronounced type, is in general rather short; it is so interlaced as to form little globular tufts pressed tightly together, the appearance of which reminds one of the fleece of a sheep.

43. 2nd. **THE INSERTION OF THE HAIR AROUND THE FOREHEAD** usually follows an angular contour. It gives the forehead the form of a rectangle, the base of which corresponds to the line of the eyebrows. It is then said that the insertion of the hair is *rectangular* (plate 43, No. 5). This is the intermediate and most common form.

44. There is also observed a *circular*, or rather semi-circular, mode of *insertion* in which the two extremities of the line terminate in front of the ears (plate 43, No. 4). The opposite form is *the insertion in ascending points* (vulgarly "slipper-shaped," Fr. *en pantoufle*): the forehead is destitute of hair above the frontal bosses, and is prolonged into two retreating angles with points more or less acute, and the line of implantation describes above and in the middle of the forehead a curve with an upward concavity (plate 43, No. 6).

The three lines: *circular*, *rectangular* and *in points*, mark the three stages of insertion characteristic of successive ages. The *circular* form is that found in many children, whose forehead, covered by the hair, seems to be elliptical. The *rectangular* form is that of adult age, while the form *in points* precedes the frontal baldness described further on.

46. 3rd. **THE ABUNDANCE OF IMPLANTATION OF THE HAIR**, a very secondary character, is expressed by the phrases *hair thin*; hair very thick or *very abundant*.

47. With the question of the abundance of the hair is connected the rather important notation of the various kinds of baldness (plate 43, Nos. 7, 8, and 9).

The fall of the hair follows two courses: *frontal baldness*, which throws back the line of insertion of the hair mentioned above and heightens the forehead; *tonsural baldness* generally appears after the first, with which it soon combines to produce *fronto-parietal baldness* (from the names of the principal bones of the skull which form this part of the head). It is well known that the hair covering the temples and the occiput is the last to fall.

48. Finally some special pathological cause occasionally results in the complete loss of the hair and beard, and produces the state called by physicians *total alopecy*.

III. The Beard (plate 44)

49. The characters of the beard are analyzed and noted by means of terms analogous to those just indicated for the hair.

50. 1st. The hair of the beard is either *straight* or *stiff*, *supple*, *slightly curly*, *frizzly*, or *very frizzly*.

51. 2nd. While it may be that (save in cases of baldness) the hair is planted with equal thickness all over the scalp, the abundance of the beard varies greatly in the same individual and from one individual to another, according to the part of the face considered: upper lip, cheeks, chin, or neck.

52. Every one knows that the hair on the upper lip is called the *mustache*, and that on the cheek the *side whiskers* (Fr. *favoris*). That on the chin is called *chin whiskers* (Fr. *mentonnière*) when it extends over the whole chin, and *goatee* (Fr. *barbe de bouc*) when it is limited to the median and lower portion of the ball of the chin. The beard which covers the under part of the lower jaw is termed a *collar*, and the little hairy tuft that adorns the middle of the lower lip a *mouche* or *royale*.

When the distribution of the beard is NATURALLY unequal, this should be specified in the description; for example: *smooth cheeks and thick mustache; large whiskers, mustache thin with hairs coarse and straight; downy mustache, small imperial; wears his beard in a collar, in a goatee*, etc.

53. 3rd. The localization of the implantation of the beard, whenever it constitutes a distinguishing character, necessarily includes the description of the *lines of insertion*. So we will give no special vocabulary for the latter.

54. It is unnecessary to insist on the ease with which the razor can instantly modify or hide the nature and distribution of the beard. From this point of view, it might almost be better to attach these features to the description of the dress than to include them in the anatomical signalment of the individual.

Contrast Nos. 1, 2 and 3 of plate 44 with the six numbers following, for the comparison of the natural implantation with the various modes of cutting the beard.

IV. The Eyebrows (plates 45 and 46)

55. No part of the face plays a more important part in the general expression of the physiognomy, seen from in front, than the eyebrow. But for the very reason of the variety of arrangements which it presents, its *complete* and *methodical* description would be long and complicated.

56. The inner extremity of the eyebrow is often designated by the name of the *head of the eyebrow*, and the outer by that of *tail of the eyebrow*. It should be remembered that we have already seen above (page 152, note) in connection with the heading for the forehead that it is important to distinguish the *hairy spindle* which constitutes the true eyebrow from the *bony arch* which serves as its support (1).

57. The following table gives a summary of the principal remarks to which the eyebrow may give rise when it is analyzed successively from the point of view: 1st, of its *relations to its surroundings*, 2nd, of its *form*, 3rd, of its *volume*, 4th, of its *peculiarities*, and 5th, of its *shade*.

Relation to surroundings	{	(1) <i>Separation of the heads of the two eyebrows</i>	{ <i>eyebrows near</i> <i>eyebrows distant</i>
		(2) <i>Elevation (or distance from the middle of the brows to the center of the eyeball)</i>	{ <i>eyebrows low</i> <i>eyebrows high</i>
Direction and form	{	(3) <i>General direction (or inclination) of the eyebrows as a whole (note the direction of the obliquity, proceeding from above to below)</i>	{ <i>eyebrows oblique-internal</i> <i>eyebrows oblique-external</i>
		(4) <i>Form of the general outline of the preceding line</i>	{ <i>eyebrows arched</i> <i>eyebrows rectilinear and sometimes sinuous</i>

(1) Moreover the implantation of the eyebrow does not correspond exactly to the relief of the arch. While the head of the eyebrow is generally drawn in front of the orbit lower down than its bony edge, the tail passes well above the arch of the orbit, which is perceived at the outer angle of the eye in the form of a projecting and broadly rounded edge.

The inclination of the bony arch being clearly oblique below, while the direction of the eyebrows approaches the horizontal, these two lines cross each other in the middle.

Volume	{	(5) <i>Total length of the eyebrows</i>	{ <i>eyebrows short</i> <i>eyebrows long</i>
		(6) <i>Width of the eyebrows</i>	{ <i>eyebrows narrow</i> <i>eyebrows wide</i>
		(7) <i>Abundance of implantation of the hairs</i>	{ <i>eyebrows scanty</i> <i>eyebrows abundant (or thick)</i>
Peculiarities	{	(8) <i>Position of the maximum of hairs</i>	{ <i>eyebrows united</i> <i>maximum (of eyebrow) at tail</i>
		(9) <i>Direction of the hairs</i>	{ <i>eyebrows pencilled</i> <i>eyebrows bushy</i>
		(10) <i>Shade, when it differs from that of the hair and beard</i>	{ <i>eyebrows blonde</i> <i>eyebrows black</i>

58. The characters of relation react on those of form, and inversely; for example: the more the eyebrow is raised above the eyeball the more likely it is to be arched; the more it is depressed upon the cavity of the orbit the more rectilinear it is and the greater the tendency of the two heads to approach each other, etc.

59. Thus it would be not only impracticable, but even completely useless, to reply separately, in each particular case, to each of the ten preceding headings. In accordance with the general instructions relating to the complementary traits, it will be sufficient to note, IF THERE IS OCCASION to do so, one or two very decided characters, using as far as possible the terms indicated in our table.

Examples: *Eyebrows rectilinear, slightly oblique-internal; eyebrows united (by a whorl of hair) and elevated (above the eyes)*. The words in parenthesis have been introduced by way of suggestion, and should, in practice, be omitted on the card.

60. The shade of the hair, which it is easy to alter, was formerly the only characteristic habitually noted in ordinary signalments in response to the general heading *eyebrows*. Now this indication possesses a recognitory value worthy of being noted only when it clearly and actually differs from the shade of the hair and beard, a peculiarity not very often met with.

61. We would insist upon the point that the qualifications of position and form: *high* or *low*, *near* or *distant*, *arched* or *rectili-*

near, relate only to the implantation of the eyebrow observed in a state of repose. If the REMARKABLE form (or position) is due to more or less habitual muscular contraction, the adjectives given above should be replaced by the corresponding substantives, accompanied by the word *nervous*. Example: ***nervous elevation*** (or ***drawing together***) ***of the eyebrows***.

62. The *elevation* of the eyebrow by a muscular *contraction* is distinguished from the *naturally elevated implantation* in that the first gives the eyebrows a more arched outline and, more especially, ACCENTUATES THE HORIZONTAL WRINKLES OF THE FOREHEAD (see plate 51, No. 8). Inversely, the *nervous* drawing together and depression of the head of the eyebrows tend to make the outline less arched or even sinuous, and to accentuate the *vertical wrinkles between the eyebrows* (see plate 50, Nos. 6, 7, 8 and 9).

We will return to this important point in speaking of the wrinkles and of the physiognomical expression.

V. The Eyelids (plate 47)

63. A theoretical description of the eyelids should analyze separately; 1st, the *dimension* and *degree* of their *opening*; 2nd, the general *direction* (or obliquity) of this opening considered particularly in its *outer angle*; 3rd, the *model* of the *upper* eyelid; 4th, the *model* of the *lower* eyelid.

64. 1st. THE OPENING OF THE EYELIDS is considered

(a) in relation to the *horizontal dimension* of the palpebral cleft;

hence the two extreme terms: $\left\{ \begin{array}{l} \textit{eyelids little slit,} \\ \textit{eyelids much slit.} \end{array} \right.$

(b) in relation to the degree of their *opening*, observed *vertically*, hence: $\left\{ \begin{array}{l} \textit{eyelids little open,} \\ \textit{eyelids very open.} \end{array} \right.$

65. It happens sometimes that the smallness of the opening of the eye should be attributed more particularly to an habitual lowering of the upper eyelid. This peculiarity is frequently observed in one eye alone. It is indicated by: (*right* or *left*) ***upper eyelid drooping*** (plate 47, No. 10).

66. 2nd. THE OBLIQUITY OF THE PALPEBRAL CLEFT is more seeming than real. It should be mentioned only when it is very pronounced, as in the Chinese type, whose eyes *with external angle elevated* are familiar to every one. The opposite type is with *external angle depressed* (plate 47, Nos. 5 and 6).

67. 3rd. THE UPPER EYELID extends vertically from its edge fringed with lashes to the arch of the eyebrow, and may be considered as composed of two superimposed bands, one in the form of a hood, movable, furnished with lashes, which everyone knows, and above it the fixed part, under which the first FOLDS ITSELF UP more or less when the eye is open.

68. The characteristic model of the upper eyelid is determined by the form of this fold WHEN THE SUBJECT IS LOOKING STRAIGHT AHEAD.

69. The expression *eyelid covered* is used to designate the cases where the fixed part entirely hides the movable portion of the eyelid. This is what is popularly called *the veiled eye*. The inverse type is the *uncovered eyelid* (plate 47, Nos. 7 and 8).

70. This character must not be confounded with the cases where the upper eyelid is brought into the depths of the socket by an exaggerated depression of the eyeball, the shape of which then ceases to be visible (see further § 87, what we say of *sunken eyes*).

71. The expression *eyelids covered* (or *uncovered*) should be replaced by *eyelids overhanging* (or *re-entering*), in those extreme cases where the eyelid forms either a swelling, hanging over in front, or a hollow (crease) partially isolating the body of the ocular globe.

72. Indicate, if necessary, whether the *overhanging* of the eyelid over the lashes tends rather to cover the outer or the inner angle of the eye.

Example: *external* (or *internal*) *overhanging of the upper eyelid* (plate 47, No. 11).

73. Other things being equal, the qualifications of the first series (*eyelids covered* or *uncovered*, which presuppose a relative fullness of the orbit) are characteristic of youth and health; while those of the second series (*eyelids overhanging*, which seem to

result from a watery infiltration of the whole orbit, or *eyelids re-entering*, which denote a state of thinness or dryness of the same part) are generally observed in subjects of ripe age.

74. The expression *eye bridled* (plate 47, No. 9) relates to a special form of overhanging of the inner angle of the upper eyelid, of which the Chinese eye (already mentioned, but in another connection) presents the typical model (1).

75. 4TH. THE LOWER EYELID offers the observer more PECULIARITIES of form than morphological VARIATIONS, properly so-called, capable of being classified between the two extremes.

76. We may note in the first place the slight swelling, of only a few millimetres thick, which sometimes extends along the whole length of the ciliary border. This is indicated by the phrase: *lower eyelid padded*.

77. The *circled eye*, which needs no definition, should be mentioned only when the bluish groove extends the whole length of the lower eyelid, distinctly separating it from the top of the cheek.

78. The *puffy lower eyelid* is more characteristic. It is distinguished from the circled eye by a swelling of the lid which, settling forward, usually describes several concentric folds (plate 47, No. 12).

79. Finally, the eyelids may be the seat of a chronic inflammation; hence the remarks: *eyelids red, weeping, bleared*, and more especially: *eyelids red and drooping*.

80. The lashes also may be *very long* or *very short*, *very abundant*, *very scanty*, or even completely *absent*.

81. *Remarks*. We have said before that the observation of the model and degree of openness of the eyelids needs to be made with the subject standing up, his head erect, and his eyes looking straight before him.

(1) In the case of Europeans, the *bridled eye* is characterized less by the presence of a true *bridle*, which among them is almost never observed, than by the special form, in the shape of a half crescent, of the movable and uncovered part of the upper eyelid, which, instead of terminating in a point at both angles, grows gradually larger from the inner to the outer angle.

82. It is easy to see, by looking at oneself in a mirror, that the upper eyelid retreats into the orbit in proportion as the forehead is inclined forwards, and that, inversely, it appears so much the more uncovered as the head is thrown backwards.

83. So these observations, delicate enough when taken on the living subject, are very liable to error when they are based only on a commercial photograph. All the artifices of the art: screen, reflector, the more or less constrained position of the subject, not to speak of the retouching, tend to diminish both the circle around the eyes, the shade cast by the eyebrows, and the wrinkles of the forehead.

84. Great caution must also be used in deciding from the examination of a photograph that there is a lack of sympathy between the two eyelids or the two eyebrows. Inequalities of this description should often be attributed to the strained expression which the very bright light of the studio produces on the eye turned toward it, while the other eye left in the shade opens freely. These asymmetries are especially apparent in judicial photographs, which according to the rules should always be taken in a full light and never be retouched (plate 51, No. 7)

VI. The Eyeball and Orbit (plate 48)

85. The *globe* of the eye, the fundamental part of the sense of sight, has the form of a sphere. Lodged in the interior of the bony cavity called the socket or *orbit*, it shows clearly only a very small portion of its surface through a veritable button-hole formed by the eyelids. The greater the *palpebral orifice* is, the greater we consider the volume of the globe to be, and inversely.

86. In reality the ocular globe, or eyeball, examined with the calipers in hand, presents only an absolutely imperceptible variation of dimension from one individual to another (1). The so considerable individual differences which we notice in this respect result only from the size of the palpebral cleft examined in the previous chapter, combined with the greater or less PROTRUSION of the eyeball.

(1) Its transverse diameter, the only one which interests us, varies only between 0 m. 023 and 0 m. 025 (SAPPEY).

87. This latter character, observed in relation to the bony circumference of the socket, is expressed by one of the two formulæ : { **eyes sunken** (Fr. *enfoncés*),
 { **eyes protruding** (Fr. *saillants*).

88. Finally, one will sometimes have occasion to note an excess or deficiency in *the interval which separates one eye from the other* (plate 48, Nos. 3 and 4). This indication, which is directly related to the degree of horizontal spread (Fr. *écartement*) of the root of the nose, and which must not be confounded with *the width of the back of the root of the nose* (plate 32, Nos. 7 and 8), should be described by means of the abbreviated expressions:

{ **interocular large**,
 { **interocular small**.

89. *Peculiarities of the eyeball.* We may mention, without defining it, the well-known peculiarity of **right or left strabismus, convergent or divergent**, commonly termed a squint in the right or left eye (plate 48, No. 8).

With the position of the eyeball in the orbit is connected another peculiarity, which we may call **raised iris** (plate 48, No. 7). This is characterized by the fact that the round of the eye, instead of being partly covered by the lower lid, is separated from it by a band more or less wide of the sclerotic (white of the eye). This anomaly of the look gives a particularly **dull** expression to the face.

90. *The orbit.* In spite of the considerable part played by this portion of the skeleton in the exterior appearance of this region, there will very seldom be any occasion to mention it by itself, as the varieties of form which it presents directly affect the aspect either of the eyeball, of the eyelids, or of the eyebrows, and enter more naturally into the description of these parts. Thus, for example, the sunken appearance of the eye is necessarily increased by the prominence of the superciliary arch which forms the upper circumference of the cavity of the orbit, or diminished by the obliteration of this same arch. From an anatomical point of view, the Chinese and Japanese, who are well known as having their eyes flush with the head, owe this characteristic peculiarity much less to the protrusion of their eyeball than to the lack of projection of their superciliary arch.

91. The individual characteristic of the orbit most apparent exteriorly is the height of the bony opening, hence the two expressions: { *low orbits*,
 { *high orbits*.

92. *Synthetic expressions.* The *hollow* or *excavated orbit* (No. 9) results from the combination in one same subject of an exceptionally re-entering eyelid with a relatively sunken eyeball. This peculiarity is more often observed in weak and aged persons than in the young. The inverse of the excavated orbit would be the *full orbit*; this expression is used to designate the combination of a protruding eyeball with a rather overhanging upper eyelid.

The height of the orbit, which is in direct relation to that of the eyebrows and the form of the lids, should be mentioned only when this part of the countenance contributes something to the general physiognomy in so far as it is a *bony cavity*, that is to say, only in cases of a more or less pronounced *excavation* of the orbit.

Thus the expression, *orbit low* (or *high*) implies a relative emptiness of the orbit, which should not be mentioned except in case of an exaggeration of this latter character; and it of course includes at the same time the concomitant depression (or elevation) of the eyebrow. Inversely the words, *eyebrows low* (or *high*), imply that the other characters, *height* and *fullness of the orbit*, etc., do not depart very much from the mean.

93. The greater or less height and the degree of hollowness of the socket, the prominence of the globe, and the elevation of the eyebrow are in direct relation to one another, even when they do not absolutely determine that very important feature the model of the upper eyelid.

Nevertheless, conformably to the general principles which serve as a guide in the selection of the characteristic features, the redactor of signalments notes among the qualifications applicable only those which seem the most characteristic, without carrying the analysis further, or deliberately seeking to ascend from the effect to the cause.

VII. The Mouth (plate 49)

94. The mouth presents two angles called also *corners* or *commissures*. It is the distance from one angle to the other which

determines the dimension of the closed mouth, and the inclination of these same angles which gives it its physiognomical character.

When the corners of the mouth are distinctly elevated, which is somewhat rarely, the line formed by the meeting of the lips is *concave* above (or "with superior *concavity*"); it is, on the other hand, *convex* above ("with superior *convexity*") when the corners are depressed. To horizontal commissures corresponds a mouth with a rectilinear outline.

95. The mouth is one of the most expressive and at the same time one of the most mobile portions of the physiognomy. Everyone knows that laughter, or even mere contentment, elevates the corners of the mouth, while sadness and disgust depress them. So these peculiarities should be noted only when they are both PERMANENT and VERY PRONOUNCED.

96. Finally, the mouth in a state of repose, instead of being kept closed as in most people, may habitually be slightly open or even gaping.

97. To sum up, the mouth, seen from in front, should be considered in relation to:

1st, its *dimension* from one angle to the other, hence the two extremes: { *mouth small*,
mouth large.

2nd, the *inclination* of its angles: { *mouth with corners elevated*,
mouth with corners depressed.

3rd, its customary *degree* of *openness*: { *mouth pinched*,
mouth gaping.

98. When the mouth is naturally slightly open, the teeth, and particularly the upper incisors, become more or less visible.

This remark is formulated in these terms: *upper* or (*lower*) *incisors uncovered*; to which are occasionally added the particulars of *prominent*, *very long*, or *very broad* (vulgarly "paddle-shaped") *projecting and separated*, *very close together*, *irregular*, *overlapping*.

99. The loss of the front teeth is indicated in the same manner whenever it results in a characteristic physiognomical peculiarity. Example: *loss of 1st* (or *of 2nd*) *right upper incisor*;

loss of the two middle upper incisors; loss of nearly all the front teeth, etc.

However, the examination of the dentition, and particularly of the large molars, is outside of the usual signaletic examination prescribed in prisons.

100. *Synthetic expression.* The phrase ***mouth heart-shaped*** relates more to the form of the lips than to the line or outline of the mouth, properly speaking. The heart-shaped mouth is characterized by an upper lip slightly turned up, with the middle furrow prolonged a little ways on the lower lip, which has very broad edges, the opening of the mouth being small and with elevated corners. (plate 49, No. 8).

VIII. The Wrinkles and Furrows of the Face (plates 50 and 51)

101. These are divided into two natural groups, according as they have their seat (1) around the eyes; (2) around the mouth.

1st. To the ocular system belong: the ***horizontal wrinkles of the forehead (full length or median)*** the ***vertical interciliary wrinkles***, the ***horizontal fold at the root of the nose***, and the ***crow's feet*** or temporal wrinkles.

102. 2nd, around the mouth there may be remarked the ***naso-labial furrow*** (plate 5, No. 4), which descends obliquely from the wings of the nose toward the commissures of the mouth, the ***jugal furrow***, which is observed in elderly persons on the cheek, behind and parallel to the preceding (plate 5, No. 3), and the ***submental furrow***, which is often joined to the jugal furrow, and which separates the chin from the lower part of the jaw and from the double chin when it exists.

103. Considered from the point of view of the DETAILS OF THEIR CONFIGURATION, the permanent wrinkles of the forehead may be ***single, double, triple***, sometimes ***quadruple*** and even ***multiple*** (plate 50, Nos. 1, 2 and 3).

The same adjectives may be applied to the vertical wrinkles between the eyebrows, called ***interciliary*** (plate 50; Nos. 4, 5, 6 and 7). The ***single*** vertical interciliary becomes very characteristic when it is a little accentuated, or ***unilateral***, i. e., on one side only (same plate, Nos. 1, 2 and 3).

104. Finally, certain faces having frontal wrinkles limited to the median part nevertheless have beneath, in the space between the eyebrows, a surface, square or in the form of a regular trapezium, which, although surrounded by wrinkles above and on each side, yet remains comparatively smooth. This quite distinctive peculiarity may be noted abbreviatively thus: *interciliary trapezium*, or sometimes *triangle* (same plate, Nos. 8 and 9).

105. The concavity at the root of the nose frequently presents a single horizontal wrinkle, and occasionally a double one (plate 51, No. 2). Sometimes the latter is combined with the vertical wrinkles to form a sort of circumflex accent crossing from one eye to the other; this is expressed by the phrase: *interciliary wrinkles circumflex* (plate 51, No. 1).

IX. Origin of the Wrinkles, and Physiognomical Expression

106. We know that the wrinkles are only the traces of folds produced in the skin of the face by the physiognomical movements most habitual to each person. Thence is derived the artistic interest and the life-like character which they impart to portraits.

From the special standpoint of identification their usefulness arises from the fact that they are the resultant of a concomitant deformation of the features which they serve to reveal. THESE CONSIDERATIONS, WHICH WILL HERE BE MENTIONED ONLY ACCESSORILY, ARE CHIEFLY USEFUL IN THE INTERPRETATION OF THE PHOTOGRAPHIC PORTRAIT.

107. The simplest way to understand the mechanism of the formation of wrinkles is to compare the skin of the face to a curtain and the underlying muscles to the cords by which it is drawn aside, which gather up the curtain in various parts. The same idea is summarized in the following law: EVERY FOLD OF THE SKIN IS NECESSARILY PERPENDICULAR TO THE DIRECTION OF THE MUSCLE WHICH PRODUCES IT.

108. Thus, without entering into further details, we may ascribe the horizontal wrinkles of the forehead to the elevation of the entire central portion of the eyebrow toward the line of implantation of the hair; and the median frontal wrinkles to the elevation of the heads of the eyebrows only; the vertical wrinkles

between the eyebrows are similarly produced by the drawing together of the heads of the eyebrows, which thereby lose their arched form, and the horizontal wrinkles of the root of the nose by the depression of the same parts.

109. In the arts special physiognomical values are attributed to each of these contractions. We may mention them here for the sake of completeness, without insisting on their absolute correctness. The elevation of the whole eyebrow is supposed to denote a state of observation or surprise, and the elevation of the heads of this organ, physical or mental suffering; their horizontal drawing together would accompany reflection, self-absorption, and their depression would reveal aggressive passions of anger, hatred, etc.

The temporal wrinkles (or crow's feet, Fr. *palle d'oie*, "goose-foot") are explained partly by a puckering up of the whole palpebral opening, analogous to that produced by a cord which gathers the edge of a full sack, and partly also by a lifting of the whole fleshy mass of the cheek. This is one of the muscular contractions which accompanies laughing.

110. In regard to the naso-labial furrow, which is observed in subjects of every age, it is not a wrinkle strictly speaking. Its entire absence in the case of an adult would almost be a peculiarity sufficiently unusual to be mentioned in the drawing up of the *verbal portrait*. Its physiognomical character changes completely according as it is most distinct towards the wing of the nose (sad and solemn expression), or towards the corner of the mouth (mocking expression). The first form, indeed, which seems to indicate a lifting of the wings of the nose and of the middle of the upper lip, recalls the characteristic appearance of weeping; while the second suggests the elevation of the corners of the mouth which necessarily accompanies the act of laughter (see plate 51, Nos. 5 and 6).

111. These abridged ideas should teach us to rectify in thought the physiognomical aspect of a full-face photograph in which the presence of accentuated wrinkles might cause a presumption of the existence of some deforming muscular contractions. Thus, for instance, as has already been indicated in the article on the eyebrows (§ 62), the same subject photographed in two places differently lighted may be represented in one case with eyebrows arched and normally spaced on a forehead free from wrinkles, and

in the other with rectilinear eyebrows the heads of which are drawn together and separated by one or more interciliary wrinkles.

They will also enable us to divine the physiognomical differences which may be produced by the obliteration of the wrinkles on the retouched photographs of commerce, and the difficulties which may thus be thrown in the way of the identification of two full-face photographs of the same subject.

112. It must not be supposed, however, that the five kinds of contraction around the eyes which we have just described (total or partial elevation, knitting or depression of the heads of the eyebrows, and crow's feet), are observed indiscriminately and in the same proportions in everyone. Each person has in this respect his own instinctive method of acting, which is peculiar to himself and from which he is not likely to depart.

Without entering into the discussions of æsthetic philosophy we may yet say in passing that it would be temerarious to seek from this source a moral prognosis of the individual. The wrinkles, so different in their form, have in general a common physiological origin: the effects of the organism to facilitate the sight and to protect the sensitive eyeballs against excess of light, dust, wind, etc.

113. This is why the rules of judicial photography not only forbid any effacement of the wrinkles, but do not fear to accentuate them by placing the subject to be photographed in a full light. A facial expression is thus obtained which somewhat recalls that of a person who, on coming out of the dark interior of a house, suddenly enters a sunny street. If this slight facial contraction, which ought not, however, to be exaggerated, does not embellish the judicial portrait in the ordinary sense of the word, we have just seen that it contributes more to the characterization of the individuality than a more fugitive expression of any kind; and none is observed more frequently in the course of the police operations on the public street.

SECTION C.—GENERAL CHARACTERS AND SUNDRY INFORMATION

114. With the exception of the two first articles, *neck* and *shoulders*, which complete the view of the face by giving it its setting, the following observations relate to what we might call

the dynamic or *physiological manifestation of the individuality*. Its characters are often so vague and changeable that no dependence could be placed on them for future purposes. On the contrary they may sometimes, when very marked, be of great use in aiding to direct individual recollections towards a determined point. So they will need to be the subject of remark only in the case of subjects who are likely to give rise to a special judicial search among the public at large. Besides it would be impossible, for want of space, to give a description of them, even an approximate one, in the paragraph on characteristic traits with the aid of abridged formulæ reduced to two or three words; it will be necessary, then, whenever supplementary observations of this kind need to be made, to have recourse to the column of sundry information, on the back of the card.

I. The Neck (Dimensions and Peculiarities)

115. This should be considered in relation to its vertical and horizontal dimensions. To the first point of view correspond the expressions, *neck short* and *neck long*, and to the second those of: *neck slender* (Fr. *mince*) or *thin*, in opposition to *fleshy* (Fr. *gras*) or *thick neck*. Cases of a *projecting larynx* (in popular language a prominent Adam's apple), *goitre*, etc., should also be noted in examination of the neck.

II. Inclination of the Line of the Shoulders (Seen from in Front)

116. This character, called also fall of the shoulders, presents two extremes, *horizontal shoulders* and *oblique (or sloping) shoulders*. It is frequently in relation with the length of the neck; a long neck usually accompanies sloping shoulders and a short neck horizontal ones.

Its signaletic importance results from the fact that it is, together with the *height*, the breadth of the shoulders, and to some extent *the length of the neck*, one of the few elements which may concur in making possible the recognition of a person seen from behind on the public streets.

117. In order to economize the space reserved for the entry of the *characteristic traits*, this indication should be noted on the line for the *shoulder-breadth* after the letters *s*^m (abbreviation for the

word *inclination*) by means of one of the letters *h*, *i* or *b*, initials of the adjectives *horizontal*, *intermediate* and *oblique* (see page 176 above, §§ 110 and 111).

III. The Attitude

118. In this study of the *general appearance* of an individual we oppose the *attitude*, or manner of holding oneself while in repose, to the general *demeanor*, or manner of conducting oneself (*gait*, *gesticulation* and facial movement or "*mimicry*").

The attitude, when analyzed in its essential parts, is found to consist in:

119. 1st, **THE CARRIAGE OF THE HEAD AND THE INFLEXION OF THE NECK**, characters which nearly always go together and which we join, for greater speed, under the same bracket. They are described by means of the formulæ; *head thrown backward* or *thrown forward*; *head bent to left* or *bent to right*.

120. The combination in certain subjects of a neck inclined forward and a head thrown backward is very characteristic, and should on occasion be made the subject of a special remark.

121. 2nd, **THE DEGREE OF ROUNDNESS OF THE BACK** which should be considered according to its two axes: *vertically*, from the point of view of the vertebral column; *horizontally*, in relation to the projection of the shoulders, which should not be confounded with their inclination seen from the front.

122. It will be remembered that the arching of the back, when this is permanent (which is recognized by the fact that it cannot be straightened up against the board at the time of the measuring of the height) should always be indicated by a numerical entry under the heading *vaulting* (see page 102, § 10), which will take the place of any other remark. As to the degree of projection of the shoulders, it should be indicated by means of the terms: *shoulders effaced*, *shoulders projecting*.

123. 3rd. We note finally, but for memory only, **THE POSTURE OF THE ARMS** and particularly **OF THE HANDS**, which may be habitually placed *on the thighs*, *in the pockets of the trousers*; *in the armholes of the waistcoat*, or *folded across the breast*. The

correct attitude of the *military man* is known to everyone, and the bearing of the *habitual criminal* is not less so to prison officials.

124. *Synthetic terms.* The expression *attitude rigid* is applied to subjects who constantly hold their back neck and head in an erect and constrained position. The opposite is the *stooping* or *careless attitude, round-shoulders*, etc.

IV. General Demeanor

125. The general demeanor (Fr. *allure*), meaning *manners, habits*, etc., may be analyzed from the point of view: 1st, of the gait (Fr. *démarche*); 2nd, of the *gestures*; 3rd, of the "mimicry" [see § 130] of the *glance*; and 4th, the mimicry of the *other organs* of the face.

126. 1st. **THE GAIT.** An accurate and complete study of the gait would demand developments altogether out of proportion to the plan of this manual. There should simply be noted, on occasion: *gait very slow or very rapid, with short steps or with long steps, light or heavy, tripping* (Fr. *sautillante*) or *sedate* (Fr. *posée*); or again: *gait stiff and measured*, the inverse of which are *dandified, gawky* (Fr. *dégingandée*): *swinging* (Fr. *dehanchée*), or *unsteady* (Fr. *en chaloupe*), according as the eccentricity to be reported is connected with the legs, the haunches or the shoulders.

The only characteristic which is to be indicated in all cases is *gait limping*, which in reality constitutes a peculiar mark.

127. 2nd. **GESTICULATION** is the voluntary or instinctive movement which we give to our body, and especially to our hands, arms and head, to emphasize the expression of our thoughts. The two extremes of this characteristic are, on the one hand: *gesticulation abundant*, and, on the other, *complete absence of gesticulation*.

Every nationality, every social class, every profession, so to speak, has a gesticulation, as well as an attitude and gait, more or less characteristic, which an attentive observer may often recognize.

128. 3rd. **THE GLANCE** (Fr. *regard*) is analyzed in this paragraph exclusively with regard to the direction and movement of the eyeball.

Its direction will be *straight* or *oblique*, according as the person examined looks habitually straight ahead or sideways. Considered in relation to its movement, the glance is *steady or unsteady, slow or quick*.

With the unsteady glance is connected the *flying glance*, the opposite of which is the glance which *looks one fixedly in the face*, or *frank glance*.

129. *Synthetic term.* The expression *glance sliding* (Fr. *en coulisse*) designates an eyeball at once mobile and oblique with an eyelid having only a small opening.

130. 4th. **PHYSIOGNOMICAL MIMICRY.** We designate thus the movements of the face and muscular contractions which give the glance its expression and which always accompany, more or less, the speech and gesture.

This heading is inserted here only for memory, for it will almost always be a repetition of the notation of the wrinkles or of the habitual expression of the physiognomy.

131. Note should always be made, however, of the convulsive and intermittent grimace called *tic*, indicating as far as possible the side of the face and the organ which is its seat. Examples: *tic of left angle of mouth; tic of entire right side of face*, etc.

132. **PERSONAL HABITS,** Has the subject examined a taste or passion for tobacco, and in what form: *cigarettes, cigars, pipe or quid?* *Does he take snuff?* Does he bite his nails?

V. The Voice and Language

133. 1st. The quality or **TIMBRE OF THE VOICE** is one of the most distinctive characteristics of the individuality. Every one knows that we recognize our relatives, our friends, all persons with whom we are in daily contact, at a distance, from one room to another, by the mere sound of their voice. Unfortunately, save by means of the phonograph, no characteristic is more difficult to note.

134. Account should be taken of voices particularly *deep* or *shrill* (Fr. *grave* or *aigu*), the *false alto voice*, a *feminine voice in a man* or a *masculine voice in a woman*.

Note that one is often tempted to attribute to a peculiarity in the timbre of the voice what in reality is only the remains of a provincial or foreign accent transmitted in the family.

135. 2nd. The principal ORGANIC VICIES OF ARTICULATION are :

(1) The pronunciation of every hard *s* like a *z* (Fr. *ze-zaiement*). Example: "Summer is here" = "Zummer is here." [Akin to this is the *lisp*ing which is much more frequently noticed among English-speaking people.]

(2) The pronunciation of *j* and *s* in the same manner as *sh* (Fr. *chuintement*). Example: "Shummer ish here."

(3) *Stammering* (Fr. *begaiement*), which results from a nervous hesitation at the beginning of certain words and from the doubling of certain syllables, etc. It varies in degree and may often be cured.

(4) The pronunciation of the *r* sound in the throat, by means of the uvula, instead of emitting it by means of the vibration of the tongue against the palate (Fr. *grasseyement*). This is one of the characteristics of the *fauburg* accent of the Parisian gamin.

136. 3rd. An accurate knowledge of the DIFFERENT ACCENTS which characterize various portions of the country would be of great value in the identification of *unknown* persons who conceal their identity, if in so delicate a matter theory could supply the place of practice.

Information of this kind when reliable need be recorded only in case of subjects who are evidently concealing their name.

137. This remark applies equally to the observation of the foreign accent. It is evident, for example, that it would be idle to describe as having an English accent a subject who gave indisputable evidence of British origin; while the mention *English accent* or *absence of English accent*, or again, *simulation of English accent*, might be important indications, in lack of others, if they applied to a prisoner who *claimed to be of this nationality*, and who was the object of a judicial inquiry.

138. The distinction between the principal *foreign accents*, when one's ear has been accustomed to them, is certainly easier and more marked than that between provincial accents. The following remarks will serve at least to direct the observation and assist the memory. They are based on the general fact that *each*

nationality carries into its manner of speaking a foreign language the pronunciation, the grammatical rules and the idioms of its own language (1).

The French, Spaniards, Italians, Germans, and almost all other nations give a different value to the vowels; the English *e* is pronounced like long *a*, long *a* as *ah*, and *i* as *e*; the *u* is often pronounced *oo* or (especially in French) *ooy*'.

The French frequently give a peculiar nasal sound to certain combinations, and especially the combinations *ing*, *ang*, *ong* and *ung*, which are more or less peculiar to the English tongue. They are apt also to roll the *r* in syllables such as *ber*, *ter*, *por*, and to pronounce *ch* like *sh* when it should be pronounced *tsh*. The English *w*, which is absent in French and many other languages, is very commonly pronounced *v*.

The English *th* is frequently mispronounced by foreigners, few other languages (with the notable exception of Spanish, in which it is very common) having an exact equivalent for it. Frenchmen usually substitute for it the sound of *z*; while persons of Teutonic stock pronounced it *d*.

139. The Germans, who in their language give almost the same value to *b* and *p*, to *d* and *t*, to hard *g* (spelled and always pronounced *gay* in German) and *k*, and especially to *v* and *f*, find considerable difficulty in modifying this custom when speaking English or French. *Good*, for instance, would be pronounced by them almost like *cool*. Similarly, the French and English *j*, which are very unlike, but for neither of which is an exact equivalent afforded by most other languages, will often be pronounced *sh* or *ch*; the French word *joie* (pronounced *zhwā*), for example, would be pronounced by them *choix* (*shwā*), and the English word *joke* singularly recalls in their mouth the sound of the word *choke*.

140. The Italians may give to words commencing with a *ch* (pronounced *k* in Italian) the sound of the latter letter, and to either a *ch* or *sh* that of *s* or *z*. Example: *shoulder*=*soulder*; *shall*=*zall*; *charity*=*karity*. In a word, the Italian finds some

(1) [As this and the following paragraphs in the original approach the subject from the French standpoint, they would be manifestly inapplicable to the use of the English-speaking observers without alterations. Much liberty has, therefore, been taken in this instance with the author's text, which elsewhere is followed with scrupulous accuracy.]

means of softening even the soft consonant sounds; while he is apt to dwell on the vowel elements of his words.

141. The Spaniard, on the contrary, succeeds in hardening even the hard consonants; he will pronounce *s* as *ts* and give *j* a guttural sound which might be described as an aspirated *y*. The Spaniards, with the exception of the Castilians, generally make no distinction between *b* and *v*, and have a tendency to pronounce *b* in place of *v*. They say that one of the French words which presents the greatest difficulty to a Spaniard is that of *voyageur* (*vwa-ya-zher'*), which he will pronounce approximately as *bwa-ya-y'hair*. To sum up, the noun *jet*, for example, would be pronounced *zhet* by a Frenchman, *chet* by a German, *sayt* by an Italian and *y'hel* by a Spaniard.

142. The Russians have no very strongly characterized defect in articulation as regards any one special letter; they may be recognized by their sing-song intonation.

Scandinavians, Swedes, Norwegians and Danes have a somewhat sing-song pronunciation like the Russians, while making the same changes in the consonants, though in a less degree, which characterize the Teutonic accent.

143. The sing-song mode of speaking leads us to speak of the part played in the *language of foreigners* by what grammarians call the *tonic accent*.

The Frenchmen of the north of France pronounce words of several syllables uniformly, but with a perceptible tendency to dwell on the *final* syllable; while in English, as in most other European languages, one or more syllables in the *middle* of the word are strongly accented at the expense of the rest, which sometimes become almost imperceptible to the unpracticed ear. The choice of the syllable accented varies greatly in different nations, and no very fixed rules on this point can be laid down.

144. The presence in the speech of grammatical inaccuracies of foreign origin, such as mistakes of gender and agreement, the erroneous use of prepositions, the use of uncouth phrases, etc., often denote the foreign origin of an individual more surely than the peculiar accent, which may sometimes be diminished to the point of being comparable to, or even less pronounced than, that of many natives from out-of-the-way parts of the country.

145. Inversely, grammatical correctness, even when joined to a strong accent, should always lead to the supposition that at least the learning of the language COMMENCED IN INFANCY.

Thus, for instance, many Alsatians, while understanding the French language in all its most delicate details and speaking it in their families since childhood, have preserved a much stronger accent than some Bavarians or Prussians who, having gained a knowledge of the language only by means of long-continued efforts, have succeeded, as a natural result of their studies methodically pursued, in preserving themselves from many faults of pronunciation.

VI. The Habiliments

146. Is the person carefully attended to or neglected, clean, dirty or even repulsive? Are the garments old or new? Do they look as if they were made to measure, bought ready-made or picked up at a second-hand store? Do they seem to be of native make? Are there any tailor's marks or other similar indications on the flaps, the lining, the buttons, the buckles, etc.? Does the subject wear socks and drawers, does he use a handkerchief? Has he a starched shirt, a standing or turned down collar? Is his linen marked, and with what letters? What is the shape and quality of his hat and his shoes? Does he carry various utensils, and particularly those found on nearly all professional tramps, to-wit: a pocket mirror, a cake of soap, comb, etc.?

147. All these observations and many more of the same kind, which stand in evident relation to the signalment, are of great importance for the establishment of the conclusions which it remains for us to formulate in the following paragraph.

VII. General Impressions and Presumptions Regarding the Social Status

148. We mean by these terms the more or less vague general idea which we receive from seeing an individual and exchanging a few words with him. His physical description, the height excepted, has little to do with this. This instinctive impression results from the combination of such fugitive characters as those which we have analyzed in the preceding pages: the wrinkles,

complexion, facial expressions, bearing, rapidity of speech, accent, tone, faults or extravagant pretensions of the language, the manner of saluting, of wiping the nose, of spitting, of smoking, of eating, and finally the care, the elegance and quality of clothing, etc.

149. In other words, the *general impression* is the direct result of the race, nationality and social antecedents; of the bringing up, the education and the profession. Hence its great signalitic interest, and hence also the greater facility of defining it when we go back to its causes.

150. Thus one can distinguish, without exactly knowing how, the resident of a city, the countryman, the mechanic, the ordinary day-laborer, the salesman, the old warehouse bookkeeper, the sailor, the soldier, the horse-dealer, the declassed, and the various kinds of professional offenders: the tramp, the beggar, the thief, the dive-keeper, the pederist, the procurer, the fomenter of rebellion, etc.

151. As all these indications are only suppositious, they should always be formulated in the column of sundry information in a hypothetical form: *has the appearance of a farm-hand, of a declassed; seems accustomed to prison life*, etc.

152. When there is question more particularly of a city workman the examination of the callosities and professional marks by a medical lawyer will often verify, and sometimes even reveal, the kind of trade exercised by the subject.

THIRD PART

STATEMENT OF PECULIAR MARKS

PRELIMINARY NOTIONS, AND DEFINITION OF THE ANATOMICAL FACES

1. The obligation of *describing* and *localizing* the peculiarities in a manner at once brief and accurate necessitates the use of some anatomical terms. The reader will learn them gradually as they are needed. But it is necessary at this point for us to at once make it clear what is meant by the words *plane* or *face*, which are the basis of every description and which we have to make use of immediately.

2. Whatever part of the human body may be under consideration, there may always be distinguished in it four *faces* (or sides): *one anterior, one posterior* and *two lateral*.

In the trunk, for example, the anterior face is represented by the front of the chest; the posterior face by the whole region of the back; and the lateral faces by the right and left sides (plate 61).

3. In the limbs the lateral faces are distinguished as *internal face* and *external face*, according as they are turned to or from the individual.

4. The subject to be examined is supposed to be in a position similar to that of the "*soldier without arms*," the arms hanging along the body, the little finger on the seam of the trousers, and the palm of the hand turned *completely* forward (1); that is to say, in a plane parallel to that of the face and the chest (plate 62).

(1) The *anatomical* position differs from that of the *soldier without arms* in that the palm of the hand is here turned *completely to the front* instead of *slightly*, as in the more natural position prescribed by the military regulations. Other ends other means.

We would remark also that the *military tactics* uses the words *turned outward* where, from the anatomical point of view, one should say *turned forward*.

5. In this position the fold of the elbow (in French popularly called *la saignée*, "the trench"), the palm of the hand and the side of the fingers opposite the nails are included in the anterior face (plate 63), while the elbow, the back of the hand and of the fingers, as well as the nails, belong to the posterior face (plate 64).

6. The internal face extends from the arm-pit to the little finger, and the external face from the shoulder to the thumb.

The faces of each finger are designated on the same principle, according as they are or are not turned towards the individual (plates 65 and 67).

7. Thus in the forefinger or INDEX, for example, the face which in the *position of the soldier without arms* described above is turned to the front is called the *anterior face of the index*; that opposed to it the *posterior face*; while the edge which touches the thumb is called the *external face of the index*, and that which touches the *medius* (middle finger), the *internal face of the index*. Similarly, the side of the THUMB or *pollex* which touches the index is the *internal face of the pollex*, and the reverse the *external face of the pollex*.

8. When a cicatrix [scar] or mark is situated exactly between two faces, this intermediary position is expressed by joining the two terms by a hyphen: *antero-internal*, *external anterior*, *postero-external*, etc. (see from this point of view, plate 67, the spaces inclosed in the dotted lines a, b, c, d).

9. In practice, the word face is omitted for the sake of greater speed. Example: *index left external*, instead of *left index, external face*.

10. It should be observed that, thanks to the use of the words *external* and *internal*, the terms of the description will be identically the same, whether in case of the right hand or the left hand. These expressions have the additional advantage of avoiding the clumsy repetition and juxtaposition of the words *right* and *left* in formulæ such as: *left face of right medius*, *right face of right auricular* [little finger], etc.

11. By analogy, and with the same object, the words *before* and *behind* are often used. Example: *cicatricial point at 8 centimetres behind* (or *before*) *left teat*.

12. In the case of the hand and forearm the distinction between the faces is rendered considerably more difficult by the ease with which these parts turn on themselves in the direction of their greater axis.

13. When the subject to be examined brings his hands forward, as it is indispensable for him to do in order to facilitate the investigations of the observer, it is nearly always the back of the hand which is presented *anteriorly* while the external faces (which are those looking towards the thumb) will be turned *inwardly*.

14. The observer, in order to *disentangle himself* in the designation of the faces of the superior member, should have recourse to the following mnemonic formula: "FOR THE BACK OF THE HAND THE FACES ARE REVERSED." These words, repeated to himself whenever he has occasion to localize a mark situated on the back of the hand or of the forearm, will remind him that in such a case whatever appears to be *internal* should be dictated *external*, whatever appears to be *anterior* should be dictated *posterior*, and vice versa (plates 63 and 64).

15. Every mark or peculiar sign should be analyzed in relation (1):

Chapter I (description)	{	<ul style="list-style-type: none"> a) to <i>its nature</i> (or designation); b) to <i>its form</i> (and in certain cases to the direction towards which it opens); c) to <i>its dimensions</i>; d) to <i>its general direction</i> (or inclination); 			
Chapter II (localization)	{	<table style="border: none;"> <tr> <td style="vertical-align: middle;">to <i>its situation</i>, expressed by means of</td> <td style="font-size: 3em; vertical-align: middle;">{</td> <td style="vertical-align: middle;"> <ul style="list-style-type: none"> e) locative prepositions; f) one or two points or parts of the body (called <i>dalum</i> points); g) the indication of the face (when there is question of one of the two upper limbs). </td> </tr> </table>	to <i>its situation</i> , expressed by means of	{	<ul style="list-style-type: none"> e) locative prepositions; f) one or two points or parts of the body (called <i>dalum</i> points); g) the indication of the face (when there is question of one of the two upper limbs).
to <i>its situation</i> , expressed by means of	{	<ul style="list-style-type: none"> e) locative prepositions; f) one or two points or parts of the body (called <i>dalum</i> points); g) the indication of the face (when there is question of one of the two upper limbs). 			

(1) The letters from *a* to *g*, which govern here the sequence of the paragraphs, refer to the columns of the large synoptical table, outside of the text, relating to the peculiar marks (77a).

CHAPTER I.—DESCRIPTION OF THE MARK TO BE NOTED

a) Nature. b) Form and Opening. c) Dimensions. d) Direction.

a) NATURE OR DESIGNATION

1. A cicatrix [scar] may come from a blow with a knife, from an abscess, from a gunshot wound, etc., or more simply from a cut, from a boil, etc.

2. When the origin of the cicatrix, as explained by the subject himself, seems probable, it should be noted in the signaletic statement. But, for greater speed, the word cicatrix is then suppressed. Example: *abscess under (the) middle (of the) right jaw*, instead of *cicatrix of abscess under the middle of*; *furuncle [that is, boil] on (the) chest, etc.,* instead of *cicatrix of furunde.....*

3. The consideration which should take precedence of all others in the choice of the scars and marks to be noted is **that of their duration, of their permanence**. The worst mistake that an observer could make would be to note as an indelible mark some identifying sign which is liable to disappear.

4. In case of doubt as to the permanence of a sign which in other respects would have some signaletic interest, the word *transient* (Fr. *passager*), followed by an interrogation mark in parenthesis, is added; when there is question of a cicatrix not yet closed the word *fresh* is used, and if, while being closed, it does not seem to have yet assumed its final aspect, the word *recent*.

5. The indications of *birth-marks* (Fr. *envies*) are accompanied by the qualification that their possessor gives them and which generally defines sufficiently their aspect; as *coffee mark*, *wine mark*, *buff mark* (Fr. *de couenne*), *flies* (Fr. *mouches*), *strawberries* (Fr. *fraises*), etc. The *beauty spots* (small brown moles) which anatomists term *pigmentary punctiform naevi*, and which in signaletic style we designate briefly *naevus*, should be carefully

described and localized. On some individuals they are too numerous to be separately noted. In such cases the principal ones should be selected and the words, *and many others*, added. When there is occasion, their aspect and diameter, etc., are noted. For instance, *nævus, hairy, of 1 c. on.....*

6. *Tattooing*. So long ago as October 23, 1849, a French ministerial circular recommended to record *the objects represented by the tattooing and not to describe them merely by the general expression of tattooed*.

7. We may mention among the objects mostly frequently represented: *an anchor, a corded anchor, a heart (pierced, flaming or bleeding, that is to say, with red tears); a dagger, a bust of a woman in right (or left) profile or full face; a naked woman, standing or lying down, in tights, in such or such an obscene position; historic personages, in head, bust, three-quarters or full-length view; a musketeer, etc., or, again, an incomplete anchor, heart, or profile, a shapeless tattooing, an unfinished musketeer, etc.*

8. In case of doubt as to the meaning of a scene or a personage or an inscription interrogate the prisoner and record his explanation. The text of inscriptions should be given exactly, **imitating on the card the form of the letters and the mistakes in spelling**, if there are any. Thus the words of the tattooing in plate 63 would be set down: *Pour la*, drawn in italic characters, and *VIE*, in capitals of slender body; and there should be added: *underneath, a shaded heart surcharging the word MARIE*.

9. From the point of view of identification tattooings have the disadvantage of being easily altered by covering them with other designs (a process which we call *surcharging*), or even completely obliterated. So, whatever may be their number and importance, they should never cause the neglect of the other peculiar marks, *nævuses, cicatrices*, etc., previously enumerated.

10. It may be recognized that a tattooing is a *surcharge* by its deeper shades and its broadened and too numerous lines. Often the old inscription remains and may still be read under the new; in such cases both should be mentioned, as in the preceding example. When the darkness of the design indicates a hidden *under*

one, which, however, there is no chance of deciphering, one should never neglect to add the remark : *apparently a surcharge*.

Example : *shaded tattooing, apparently a surcharge, representing Jean Bart at full length (standing) his right hand on a cask of powder*.

11. The effacing of tattoo marks, which can be secured only by the superficial destruction of a portion of the skin, always leaves a cicatricial tissue, the appearance of which recalls that of an old burn, and whose form reproduces more or less exactly the original design. Very often some points or spots of unobliterated tattooing will remain as evidence in the middle of the cicatrix.

Marks of this kind should be observed with the greatest care, in strict conformity, as regards the shape, direction, dimensions and location, with the instructions of the following sections. In such a case one should take care to mention the probable origin of the scar; for example : *cicatrix of a burn apparently hiding a tattoo*, adding, whenever possible, the nature or shape of the tattooing which is supposed to have been effaced in whole or in part.

δ) FORM AND OPENING OF THE SIGN

12. The peculiar marks, and especially *linear* cicatrices, that is, scars resembling a *line*, a mark without thickness, have a shape which should be qualified either as *rectilinear* or as *curved* in the more simple cases, which are at the same time the ones most frequently met with.

13. The terms *sinuous*, *in a broken line*, *zigzag* (Fr. *en dents de scie*—*saw-toothed*), *arrow-headed* (Fr. *en fer de flèche*) *hooked* (Fr. *en crochet*) *in a horse-shoe* (Fr. *fer à cheval*) *in the form of a V*, *of a Z*, *of an X*, *of a +* (*cross-shaped*) are less often employed.

14. As for the words *oval*, *oblong*, *circular*, *triangular*, they are applied especially to the non-linear marks, that is, to those which show a certain width as well as length.

15. In the case of *curved* scars, and in general all those which present any hollow or concavity whatever, the indication of the direction of the *cavity* should be added immediately after the description of the shape. We understand by this the indication

of the face toward which the cavity is turned when the subject is supposed to be brought into the anatomical position similar to that of the *soldier without arms* (§ 2 and following). Thus a scar in the form of a V will be called *with cavity superior* when it appears in the normal position of that letter, and *with cavity inferior* when it is reversed: \wedge .

16. Let us examine from this point of view the various scars on the subject in plate 61. The cicatrix on the neck, No. 1, will be called *rectilinear*, although, closely observed, it perhaps shows a slight concavity; that on the shoulder, No. 2, the general direction of which is rigorously vertical, will be qualified as *curved with cavity posterior*, while the two situated on the forearms, Nos. 3 and 4, will be called *with cavity superior*.

In plate 62, fig. 1, under No. 8, above the left thumb, we find a *cicatrix curved with cavity inferior*.

17. To sum up, a curved line whose general direction is horizontal can only have a [con]cavity turned *superiorly* (upwards) or *inferiorly* (downwards). It may be considered, for the sake of greater simplicity, that the same is true for all the scars whose general direction is oblique, that is, neither exactly horizontal nor exactly vertical. But it is necessary for these latter (the distinctly vertical, which are, however, but seldom met with,) to resort to the terms *anterior* or *posterior*, *internal* or *external*, according to the position of the mark to be described.

c) DIMENSION OF THE SIGN

18. The unit of measurement for the individual signs, as for the osseous lengths of the signalment, is the centimetre. Thus *one, two, three centimetres* will be written 1, 2, 3, etc., while *one, two, three millimetres* will be recorded under the form: 0.1—0.2—0.3—etc.

19. The dimensions, whether in centimetres or millimetres, are indicated only approximately, without seeking an absolute exactitude, for which in the case of the peculiar marks there is no longer any reason. Beyond the third centimetre, therefore, the millimetres are rarely counted. A scar may measure 1 or

1.8; 2 or 2.5; 3 or 4 centimetres; but a scar measuring exactly 5 centimetres 7 millimetres would be described as being 6 centimetres.

20. When the scar is circular the diameter only is noted, while both diameters are indicated in the case of *oblong* or *oval* scars. For instance, a rectilinear scar 4 centimetres long by about 3 millimetres wide would be recorded in the following form: *cicatrix rectilinear of 4/0.3*, the two figures of dimension being placed one above the other and separated by an oblique line.

21. Every cicatrix marked with a single figure of dimension is from that fact understood to be linear, that is resembling a line having no width, without any other mention of this needing to be made in the description.

d) GENERAL DIRECTION OR INCLINATION

22. The general direction of a mark is *vertical*, *oblique* or *horizontal*.

23. To determine the direction of scars situated on the arms and hands, the subject must be imagined to be standing in the position of *the soldier without arms*. It goes without saying that there could be no question of indicating the direction of cicatricial points, circular scars, moles, etc.

24. In the description of scars only a relative precision should be attributed to the qualificatives of inclination. Strictly speaking, no scar is as horizontal as a spirit-level nor as vertical as a plumb-line. If such a precise signification were given, all scars would be termed *oblique* and that word would lose its value. In doubtful cases one may relieve one's self of embarrassment by the use of the formulæ *nearly vertical*, for the directions which approach the vertical, and *slightly oblique*, for those which are not far from the horizontal.

25. In the description of oblong scars, distinguish between cicatrices which are *oblique internal* or *oblique external* and those which are *oblique anterior* or *oblique posterior*, according as an imaginary prolongation of the line of the cicatrix *from above to below* would extend inwardly or outwardly, forward or backward, in relation to the subject when supposed to be standing in the anatomical position.

26. We would recall here the mnemonic formula that we have given in the preparatory remarks (p. 214, § 14): **FOR THE BACK OF THE HAND OR FOREARM THE OBLIQUITY OF THE SCARS IS REVERSED.** Thus the cicatrices Nos. 2 and 3 (plate 64, fig. 2) will be noted as *oblique external*, although at first sight, prolonged from above to below (that is to say downward), they are directed *inward in the drawing*; while the mark No. 3 of figure 1 will be qualified as *oblique internal*, although it appears to have an *outward* inclination.

27. It is easy, in fact, to see that, if the arms represented were supposed to be turned around so as to be brought into the position of the soldier without arms, all the scars indicated would by this movement be brought into a direction diametrically opposite to that of the figure; while the oblique internal mark which is situated on the upper arm (fig. 1, No. 1) would remain almost unchanged whatever might be the position of the forearm.



CHAPTER II.—LOCALIZATION OF THE MARK TO BE NOTED

e) REMARKS ON THE USE OF THE LOCATIVE PREPOSITIONS

1. The localization of the signs in relation to the various datum points and parts of the body is expressed by means of the following prepositions, which should be used in preference to all others : *on, above, under, middle, across.*

2. *On* denotes the direct superposition of the mark on the designated spot. For example: *furuncle* [boil] *on 7th vertebra* would signify that the scar is situated directly on the prominent vertebra of the neck.

3. To express that the sign is *above* or *beneath* a certain part designated the words *above* and *under* should be employed, and should always be preceded by the preposition *at*, itself accompanied by the number of centimetres intervening. Example : *furuncle at 6 above 7th vertebra and at 4 to left column.*

4. The word *under* (Fr. *sous*) is used instead of *beneath* (Fr. *dessous*) in dictation as it is shorter and less likely to be confused with its opposite, *above* (*dessus*).

5. The words *middle* and *across* replace the preposition *on*, when the observer wishes to express that the mark to be described is equally distant from the two extremities of the datum point. Example: *nævus middle left eyebrow; mole at 3 under middle left half of mouth.*

6. We would remark, finally, that, while the preposition *of* precedes a figure of *dimension*, the preposition *at* announces a value of relation, an interval, a position : *at so many centimetres under or above.*

7. The numerous examples given in this chapter will show that, amid all the elliptical formulæ to which the cicatricial vocab-

ulary has recourse, these two prepositions when followed by a number are never suppressed and could not be without making the phrase lose all its clearness.

8. The word *of*, on the contrary, when it does not precede a figure of dimension, as well as the articles *a*, *an*, *the*, and even the preposition *on*, when the latter is itself followed by a complementary preposition (*on the middle*, *on the cross line*, etc.,) should be omitted whenever possible. Thus the complete phrase : *a nævus situated on the middle of the left half of the lower lip* will be briefly announced : ***nævus middle left half lower lip.***

f) SPECIAL DESIGNATION OF THE DIFFERENT PARTS OF THE BODY;
TERMS AND ANOMALIES PECULIAR TO EACH

9. The description of the peculiar signs should begin with :

- I. Left upper arm and forearm, then left hand;
- II. Right upper arm and forearm, then right hand;
- III. Face and front of the neck;
- IV. Chest, front of shoulders, and part of stomach situated above the waist-band of the trousers;
- V. The back of the neck and the region of the back;
- VI. The other parts of the body where there are any anomalies to be noted.

10. By making it a rule to always **begin the examination with the left upper member before passing to the right**, and, in general, with **the left half before the right**, the chances are diminished of a confusion between the words *right* and *left*, which is always very detrimental.

11. Each of the six divisions enumerated in the preceding paragraph should, moreover, appear in the statement of scars in its proper order, **with its roman numeral in the margin.**

In order to take every additional precaution against confusion between the right and left sides, it is the rule, in spite of the presence of the roman numerals I and II which separate the peculiarities of the left member from those of the right, to repeat the words *right* and *left* at the end of each localization of a mark observed on these parts.

12. The object of the roman numerals reproduced on all the signaletic cards is to as far as possible arrange the scars and peculiarities in distinct groups according to the parts of the body, and thus to facilitate the *comparison* of the peculiar marks in two signalments suspected to refer to the same individual.

13. THIS IS AN IMPORTANT MEANS OF ORDER THE NON-OBSERVANCE OF WHICH WOULD RENDER COMPARISONS OF THIS KIND INFINITELY LONGER (1).

14. The absence of peculiarities in any division is indicated by a dash.

I and II. Right and Left Upper Arm, Forearm, and Hand
(plates 63 to 68)

15. a) The UPPER ARM commences at the *shoulder* and ends at the *elbow*, which we call the humero-cubital articulation, and by abbreviation *cubital* simply.

The elbow, when its four faces are considered, is divided into: *cubital posterior* (or elbow proper), *cubital internal*, *cubital external*, and the *fold of the elbow*, which, by analogy and abbreviation, we call *cubital anterior* (plates 63 and 64).

16. It is these two extremities, *shoulder* and *cubital* (2), which serve as datum points in designating the location of a scar on the arm. Examples:

Cicatrix curved with cavity posterior of 7 vertical on shoulder left external (plate 61, No. 2).

Cicatrix sinuous of 9/05 vertical at 4 above cubital left posterior (plate 62, fig. 2, No. 3).

Nævus at 11 above cubital left external (plate 63, fig. 1, No. 1).

Cicatrix rectilinear of 2 oblique internal at 4 above cubital left antero-external (plate 64, fig. 1, No. 1).

(1) It is useless over and above the roman numerals to number separately each of the marks already grouped under the same chapter. On the ordinary signaletic cards the peculiarities noticed on the same part of the body are separated from each other only by being put on different lines. It is, then, only for facilitating the demonstrations, and especially references to remarks on the figures, that most of the examples given in this volume have been provided with a special serial number.

(2) In signaletic extracts intended to be published or read in court, etc., be careful to replace the abridged expression of *cubital anterior*, *cubital posterior*, etc., by the complete and more correct formula of *anterior face*, *posterior face*, etc., of the *articulation of the elbow*.

17. *b*) The FOREARM is limited above by the *elbow* (or *cubital*) and below by the *wrist* (plate 63), datum points which are to the forearm what the shoulder and cubital articulation are to the upper arm. Examples:

Cicatrix curved with cavity superior of 5/03, oblique external, at 3 above wrist left anterior (plate 64, fig. 1, No. 4).

An anchor of 6/3 at 6 under cubital right anterior (plate 64, fig. 2, No. 3).

18. *c*) There are distinguished ON THE HAND (plates 65 and 67): 1st, on the anterior face, the *palm*; 2nd, on the posterior face, *the back of the hand*, not including the fingers; then come, 3rd, *the five fingers* or *digits*, which we have already enumerated while distinguishing the faces, to-wit: the *pollex* (or thumb), the *index* (first finger), the *medius* (middle finger), the *annular* (third finger) and the *auricular* (little finger).

19. Each finger, the thumb excepted, is composed of three *phalanges* which are joined to each other by articulations called *joints*. Conformably to custom, we begin the enumeration of the phalanges and the joints at the upper extremities: *first joint and first phalanx; second joint and second phalanx; third joint and third phalanx*. Thus the first joint is contiguous with the palm in front and with the back of the hand behind. (1)

20. The thumb has only two joints and two phalanges. The part of the hand which joins it to the wrist has received, in signaletic practice, the name of *base of the thumb*.

(1) Anatomists will remark that the articular datum points, elbow, wrist and especially the finger-joints are determined, in signaletic practice, not by the theoretical line of articulation, the precise localization of which would be somewhat difficult, but by the folds and furrows of the skin which reveal it outwardly. As a result the datum points for the anterior faces are never situated precisely on the same horizontal plane as the corresponding ones for the posterior faces. Thus, considered in the soldier without arms, the datum line of the *anterior wrist* is situated two centimetres lower down than that of the posterior wrist.

But the difference is especially noticeable in the case of the first joints of the fingers, the thumb excepted. While, in the posterior face, our datum points correspond to the anatomical line of articulation which passes through the numbers 2, 3 and 4 (plate 67), in the anterior we take as a base line the folds on the edge of the palm (see *J¹*, plate 65); that is to say, a position more than two centimetres and a half lower down than that of the posterior face. Hence, there may occasionally be some hesitation in the precise localization of signs situated on the lateral faces, which thus find themselves astride between two datum points. But the accurate determination of the anatomical line of the joint would have presented to our officers many more difficulties and afforded still less rapidity.

21. The space between each finger is defined thus: *between pollex and index, between index and medius, between medius and annular, between annular and auricular* (plate 67).

Peculiarities Special to Regions I and II

22. In the posterior space between the thumb and index there are often found small tattooings, *anchors, hearts, initials, etc.*, of very great signaletic value.

23. The fingers may be *amputated by the last phalanx, by the two last phalanges or by all three phalanges.*

24. Very often, especially as a result of a felon or whitlow (*panaris*), the last phalanx is merely injured without being positively removed; the finger is then said to be *shortened* (Fr. *racourci*).

25. The cases where a remaining stump of a nail is more or less *curved or deviated* should also be noted. Fingers which have been crushed anteriorly often have the nail *thickened*. An injury at the root of the nail may cause what we call a *striated* nail, a common peculiarity, of great permanence and easy to describe, which is noted abbreviatively thus: *nail medius left striated* (plate 68, No. 4).

26. The scars and cuts on the fingers should be carefully described whenever it is evident that their imprints will remain for life.

27. However, when their number exceeds four or five on each hand, only the principal ones need be noted. Faint marks, which might be overlooked at a subsequent examination, are preceded by the adjective *slight*.

28. The joints of the fingers, and in general any of the articulations, are likely to be *ankylosed*, either *slightly, partially or completely*. In the first case the movement is merely impeded, while in the last all movement is impossible. In *complete ankylosis* it must be specified whether the two members are united *in a straight line or at a right or obtuse angle* (see the remarks on the measuring of the fingers, First Part, page 125, § 36 and following).

III. Face, Ears, and Anterior Face of Neck (plates 69 to 72)

29. It is sufficient to recall, without defining them, the different parts of the face which may be the seat of peculiar marks, or serve as datum points for the indication of their position. They are well known to every one, and have already been analyzed in the descriptive part of these *Instructions*.

30. They are, commencing above, the *scalp* and the *line of implantation of the hair*; the *frontal bosses*, right and left; and, below, the *root of the nose*; then the *eyebrows*, which are divided into *internal point* or head of the eyebrow (right or left); *external point* or tail of the eyebrow (right or left); and *middle* of the eyebrow (right or left).

31. Then come: the *left eye* and the *right eye*, with their *upper and lower eyelids* which are noticed to have an *internal* and an *external angle*; the *ridge* and the *base of the nose*, which together form what is called the profile of the nose; the *wing (right or left) of the nose*; the *tip of the nose*; the *under part of the nose* and the *opening of the nostrils*; the chin, divided into the *point of the chin* and the *under part of the chin*.

32. If from the chin we ascend obliquely toward the ear, we meet the *lower part of the cheek*, and, immediately below it, the jawbone or *maxillary (right or left)*.

33. There are often observed in scrofulous persons abscesses worthy of remark under the maxillaries, at about 5 or 6 centimetres under the *lobe* of the ear.

34. Above we find the *cheek* proper, then the *cheek-bone* (Fr. *pommelte*), and above and behind it the *temple*.

In regard to the ear, already described in the Second Part, we may mention especially the little cartilage of the *tragus* and the *lobe*, both very convenient points of reference for the location of scars on the cheek and neck.

Examples of Peculiar Marks to be Noted under No. III

Cicatrix rectilinear of 2, horizontal, at 3 above eyebrow, left, half external (plate 72, No. 1).

Cicatrix rectilinear of 1/02, oblique to left, at 1 above root of nose (plate 72, No. 1).

Nævus at 2 under external angle of left eye (plate 72, No. 5).

Scrofula with cavity superior, of 4, oblique anterior, at 6 above and to left larynx under maxillary (plate 62, No. 6).

Furuncle at 1.5 above external point right eyebrow (plate 70, No. 1).

Cicatrix triangular of 0.7 at 3 before tragus right (plate 70, No. 2).

36. On the anterior face of the neck there is remarked the projection of the *larynx* (commonly known as Adam's apple), and lower down, at the top of the chest, is the fork of the sternum, abbreviated to *fork* simply; both valuable datum points for designating the position of the moles, birth-marks and scars of which this region is often the seat. Example:

Nævus hairy at 1.5 under larynx (plate 72, No. 7).

IV. Chest, etc. (plates 73 and 74)

37. The datum points for the CHEST, or more generally for *the whole anterior face of the trunk*, are: the *fork*, already mentioned, the *right* or *left* nipple or *teat*, the *umbilicus* (or navel) and the *median*.

38. By *median* we understand an imaginary line which would divide the body into two equal and symmetrical parts, passing down the anterior face: through the middle of the forehead, the profile of the nose and chin, the fork, the navel and the crotch (plate 62, figs. 1 and 2, line X Y). Although it is rarely utilized as regards the face, it is in constant use for the chest.

39. In the formulæ of localization it should appear only in the second place, after a first more definite indication with relation to the fork, to the nipple, or to the navel.

Examples of Peculiar Marks to be Noted under No. IV

Nævus at 6 under larynx and at 3 to left median (plate 74, No. 1).

Cicatrix of operation for croup of 2.5, vertical, at 3 under larynx (plate 74, No. 2).

Cicatrix rectilinear of 3.5, oblique external, at 7 under fork and at 3 to left median (plate 74, No. 5).

Nævus at 2 above and behind right coat (plate 74, No. 6).

Very deep cicatrix curved with superior cavity of 8/02 at 15 under fork and at 2 to right median (plate 74, No. 7).

Cicatrix round of burn of 3 at 10 above umbilicus on median three-quarters to left of latter (plate 74, No. 10).

V. Back of the Neck and Region of the Back (plates 75 and 76)

40. On the posterior plane, the median is represented by the vertebral column, abbreviatively the *column*. The other datum point for the whole surface of the back is the *seventh vertebra* or prominent vertebra, which for this region plays the part which devolves on the fork in the case of the chest. So this datum point should always be announced first, before the column.

The seventh vertebra, abbreviated to *7th* merely, is situated on the vertebral column a little above the line of the shoulders. In thin subjects it projects in the normal position; when it does not do so, its place is determined either by feeling with the fingers or by making the subject's head incline forward a moment.

41. It is somewhat difficult to distinguish the seventh vertebra from the sixth or fifth, which may be equally prominent. The errors which result from confusions of this kind are too slight for us to insist upon them.

Examples of Peculiar Marks to be Noted under No. V

Deep cicatrix slightly curved with cavity superior of 5 oblique external, at 12 under 7th and at 9 to right column (plate 75, No. 5).

Deep nævus at 18 under 7th and at 10 to left column (plate 76, No. 6).

Cicatrix rectilinear of 3/02, oblique external, at 24 under 7th and at 6 to left column (plate 76, No. 7).

VI. Anomalies and Peculiarities to be Noted on Other Parts of the Body

42. The method of description whose application to the upper members and the trunk we have just described is equally applicable to the lower members. Its use, however, is much more limited, as the metric signalment should generally be taken, in the stations, without the subject having to remove his trousers. So we shall enter into no details.

43. The observer who has familiarized himself with the preceding examples will readily settle each case separately. He need never hesitate *to go ahead* and make use in his descriptions of the words of current speech, whenever the technical vocabulary does not furnish him with more precise ones.

44. The minimum number of peculiar marks which should be described in each subject is, as we have said, from five to six. But in some cases it may be necessary to more than double this number. In fact, when a subject presents a great number of scars, it is impossible to limit one's choice to identically the same ones that have been or may be selected by another observer. Now the agreement of some of the peculiar marks being an indispensable element of identification, it becomes necessary, in such cases, to describe about all the important marks.

45. In the VERY EXCEPTIONAL cases where the minimum of *six peculiar marks* cannot be obtained, it is indicated that this insufficiency is not the result of negligence on the part of the operator by adding the formula: *no others*.

CHAPTER III.—MANNER OF ANNOUNCING AND RECORDING THE
MARKS OBSERVED

1. The taking of the peculiar marks demands a certain rapidity: 1st, in the enunciation of the descriptive phrase; and 2nd, in the very act of writing it. We will indicate the means by which this double end can be obtained.

I. Rapidity in the Announcing

2. This is easily acquired if one takes care, from the very first exercises, never to deviate from the prescribed order of description and localization.

3. The phrases, always running in the same mold, take on a certain rhythm which soon imposes itself upon the anthropometrical apprentice and guards him against any omission.

4. Let us take as an illustration the mark No. 3 (plate 64, fig. 1), which is thus specified:

*Cicatrix rectilinear of 6 oblique internal at 9 above
wrist left posterior.*

5. We would remark in the first place, from the point of view of the rhythm of the phrase, the opposition of sound which is generally observed between the obliquity of a scar situated on a member and the designation of the face on which it is placed. It is easy to see that when the obliquity is *internal* or *external* the mark can only be situated on the *anterior* or *posterior* faces, and inversely, that when the obliquity is *anterior* or *posterior* the mark must be on one of the *external* or *internal* faces.

The opposition of sound resulting from this balancing, as it were, of the words is expressed by the following mnemonic formula, which is not without some use at the beginning of an apprenticeship: *When the obliquity is in or* (that is to say, when the term which indicates it ends in *al*), *the face is in al; and, inversely, when the obliquity is in al the face is in or.*

6. There is no exception to this rule except for the marks situated on the borders midway between two faces; one can imagine an oblique anterior sign situated on a face qualified as external-anterior.

7. We would remark in conclusion that our expression, *at 9 above wrist left* indicates only by way of deduction that the mark is on the forearm. Similarly, in speaking of a *navus* (mole), when we say that it is *at 3 above head of left eyebrow*, we imply that this sign is on the forehead. To mention the position in exact terms would uselessly make the phrase a word longer.

8. **Conclusion: Avoid announcing the name of the part of the body which is the seat of the peculiarity, whenever its precise position can easily be deduced from the indications furnished by the datum points.**

II. Rapidity in the Act of Writing the Statement of Peculiar Marks

9. This is obtained by the use of abbreviations reduced to such a point that some of them resemble in form the signs used in stenography.

10. The first edition of the *Signalitic Instructions* had already given a list of them, very limited as to number and boldness of abbreviation, but left their use optional.

11. The needs of practice have since then largely extended their application, at the same time giving them a shorter and shorter and more and more conventional form.

12. This cursive writing has attained to-day, in the central services of Paris, Lyons and Marseilles, a degree of perfection which could not be excelled and which demonstrates that it has reached its final shape. Thanks to it, a clerk after five or six days of practice easily succeeds in writing down the statement of scars as fast as it can be dictated. Finally, the legibility of the phrases thus produced is such that their interpretation is manifestly easier and more rapid than if they had been written out in full.

13. The proof of this is that the employees of the central service in Paris whose duty it is to make the investigations in the anthropometrical files prefer to recopy with abbreviations the

various signalments of recidivists under assumed names which are sent to them daily from other parts of France for identification, rather than to use them as they are.

14. So we cannot too strongly recommend that anthropometrical officers should familiarize themselves with these signs; the economy of time in the task of writing which will thence result will compensate them liberally, after the first week, for the very short apprenticeship which they require.

15. Nevertheless, the copies of signalments destined for the judicial or administrative authorities should always be written out in ordinary characters whenever there is room to suppose that the persons who will have to make use of them may not be familiar with the practice of such professional processes.

16. We give further on four lists of our abbreviations: the one hereafter, in the *Instructions*, with an explanatory commentary for teaching; the other grouped in a *table*, following the order of the chapters, for the first attempts of a secretary; a third, in the *alphabetical order of terms*; and the fourth, in the *alphabetical order of abbreviations*. This last is especially addressed to the uninitiated reader, to a counsel for the defense, for example, who might have occasion to decipher an abridged statement of scars or to verify its translation.

17. **The extension of abbreviations to other terms than those of these lists would inevitably lead to confusion and should be absolutely prohibited.** The special advantage that might be drawn from them would moreover be insignificant, the list of abbreviations recommended including the whole number of terms in most frequent use.

18. The signs, and particularly those which are reduced to simple initials or to conventional lines, ought to be drawn *very correctly*, if one wishes to avoid seeing them degenerate into an illegible scrawl.

With the exception of the several cases that we are about to point out, it is particularly necessary to guard oneself against uniting by supplementary strokes the words which ought to be separated, or inversely from omitting the connecting strokes between the different letters of the same abbreviation.

19. Example: *small* (or little or petty), *medium* and *large* (or great) are entered here, as for the descriptive characteristics, by means of the initials *p. m. g.*, while the datum-point *wrist* (or poigne, Fr. *poigne!*) is represented by the group of consonants *pg*. The hand and the eye habituate themselves readily to fixing and reading under this form the word *wrist*. But let a negligent or inexperienced clerk happen to separate the *p* from the *g*, and the unguarded reader will be tempted to read "small-large" (*petit grand*) until the contradiction between the terms thus connected makes him divine his mistake or rather that of his correspondent.

20. The signs and letters employed are chosen in such wise as to form a symbol as much shorter than the term to be represented as its use is more frequent.

21. An effort has been made to preserve only the initial letter of the principal terms or, in case of repetition, the first consonant or the group of consonants of the first syllable. The consonants, in fact, which are the skeletons of words, characterize the latter infinitely better than the vowels do.

22. Several of the most frequent terms, beginning with the same initial letter, have been distinguished by means of the exclusive adoption for each one of them of a special kind of letter (capital, small letter, Latin or Greek characters, etc). Two signs, borrowed from stenography, are in no wise connected with the alphabet, and are absolutely conventional. It is with the description of these forms, to some extent over-abridged, which (as we must admit) give to this writing as a whole a somewhat strange aspect, that we shall begin the review of the cicatricial vocabulary.

23. 1st. *Abbreviations with a stenographic and super-abridged form.* See on the large *synoptic table of signalitic terms* (77 a), last column on the right, the **special list of signs with conventional forms**. The words *above* and *under*, which return so often in our formulæ for scars, are represented, the first by a horizontal mark about three millimetres long, traced from left to right along the dotted line printed on the card, surmounted by a semicircle with a large vertical diameter and with its concavity turned towards the right. The semicircle should be added to the horizontal line by returning a little backwards and upwards, that

is to say, without losing contact with the paper, without lifting the pen.

24. The word *under*, the meaning of which is the opposite of the preceding, is represented by a little horizontal mark of the same kind as the preceding and terminated by a hook descending *below* the line. Thus the symbols for the words *above* and *under* are distinguished only by the place of the hook, which is situated *above* to represent the first, and *below* to represent the second.

25. By analogy, the adjectives *superior* [upper] and *inferior* [lower] are figured by the same signs as the prepositions *above* and *under*, the sense and the position of these designs in the sentence sufficing to indicate with which of the two parts of speech, preposition or adjective, one is dealing.

26. The four faces, *anterior*, *posterior*, *internal* and *external*, are each represented by their initial letter traced in characters imitating certain Greek letters: *anterior* by alpha, α ; *posterior* by a letter recalling the rho, ρ ; *internal* by an iota, ι ; and *external* by an epsilon, ϵ .

27. The loop of the symbol for *anterior* is turned, be it said in passing, in the opposite direction from that of *posterior*. In regard to the symbol for this latter term, it is important to begin it by tracing with a pen a little horizontal mark one or two millimetres long, following very exactly the dotted line before ascending to form the loop; finally, a detail quite as important, it is necessary to take care that the last stroke of the loop descends vertically in relation to the line; the inverse inclination, that is to say, oblique from above to below and from left to right, is even preferable, so far as this stroke is concerned, to the inclination from right to left of ordinary writing.

28. There is nothing to be said regarding the abbreviation for *internal*, the sign employed having the same form in the Greek writing, and in English and French, as it has here.

29. As for the symbol for *external*, we would remark that it is not a capital *E*, as one might think at first sight, but a design analogous in form to a reversed 3, of the same height as the body of the cursive writing.

30. By an exception to the general direction (§ 18) which forbids the union of signs in abridged writing there is allowed for

greater rapidity a fusion of the six preceding symbols with the letter *c*, abbreviation of the word *curved*, which constantly occurs in connection with them.

31. We have seen, indeed, that the form of *scar* qualified as *curved* should always be followed by an indication of the face (*superior* or *inferior*, *anterior* or *posterior*, *internal* or *external*) towards which the concavity of the curve is turned. On the other hand, it is the rule to omit in the written phrase the words *with cavity*, while continuing to announce them in the spoken phrase. Thus the phrases dictated: *cicatrix curved with cavity superior*, or *cicatrix curved with cavity internal*, become when transcribed: *cic. c. sup.*—*cic. c. int.*

32. The union of the letter *c* with the six signs above results in the production of veritable monograms which permit the representing of a whole clause with a single toss of the pen (see in the lower part of the last column on the right of the large synoptic table, the list of COMPOSITE CONVENTIONAL SIGNS).

33. The two super-abridged signs departing ever so little from the ordinary forms of writing of which it still remains for us to speak stand for the words *left* (or *sinister*, Fr. *gauche*) and *right* (or *dexter*, Fr. *droit*). The first is represented by its initial consonant *g*, which is distinguished from the similar abbreviation of the word *great* by tracing the upper loop to the right of the long stroke, and not to the left as in the ordinary French or English small *g*. This form of *g* is not absolutely exceptional; it is met with in some kinds of commercial handwriting, especially of English origin.

It is distinguished from the symbol for *posterior* by its loop below and by its general inclination oblique from right to left, parallel to the ordinary direction of writing, and no longer vertical. It may also be said of this sign that it differs from the small *h* of German script or from the long *s* of old-fashioned French and English script only by a diminution in the height of the upper loop.

34. The word *right* is figured by means of a sign analogous to the *dele* of proof-readers, that is to say, an initial letter *d* furnished at the top and left of the ascending stroke with a descending loop which is terminated by a final stroke that crosses again to the right (also used in German and Greek manuscript writings).

35. *2nd. Abbreviations reduced to the initial letter of the word to be represented.* The five fingers of the hand are represented by the initial of the [technical] name of each of them written in a manuscript *capital* letter, with the exception of the auricular (little finger), which, in order to distinguish it from the abbreviation of annular (third finger), is represented by an *O*.

36. The three kinds of inclination, *horizontal*, *vertical* and *oblique*, are written respectively by means of the consonants *h*, *vr* and *b*; this last in place of the initial vowel *O*, already employed for the auricular. *Oblique internal* will therefore be written *b i*, *oblique external b e*, *oblique anterior b a*, etc. It is allowed in practice for the symbol of vertical, *vr*, to take on in cursive writing the form of a *w*.

37. The symbols *P-I*, *I-M*, *M-A*, *A-O*, will be read respectively: *between thumb* (pollex) *and index*; *between index and medius*; *between medius and annular*; *between annular and auricular*.

38. The words relating to the shape of linear scars (*cicatrices*): *rectilinear*, *curved* (already mentioned), *sinuous*, and *broken*, are represented by means of the corresponding letters: *r*, *c*, *s*, and *br*.

39. *j* is the abbreviation for *joint*, and *f* that adopted for *phalanx*. One should unite by a final stroke and trace without lifting the pen the letters *j* or *f* and the number of the joint or phalanx which must always and necessarily precede them. Example: *1st phalanx* and *2nd joint* are written *I f* and *2j*; *3rd joint* and *3rd phalanx*, *3j* and *3f*.

40. Let us finally recall for the sake of memory the letters *p. m. g.*, abbreviations already mentioned for the words *little*, *medium* and *great*, and the letter *k* already employed in the anthropometrical part to designate *ankylosis*.

41. *3rd. Abbreviations composed of several consonants together without intervening vowels.* It will be sufficient to enumerate them without comment, as the motives which have determined the preservation of certain letters may be easily deduced from the preceding considerations and examples.

42. The numeral adjectives: *some* (Fr. *quelques*), = *qq*; *several* (Fr. *plusieurs*, compare *plural*) = *pls*; *numerous* (or *numbers of*) = *nb*.

43. The qualifications of form: *broken* = *br* (already mentioned); *deviated* = *dv*; *square* = *qr*; *hooked* (Fr. *en crochet*, compare *crotchet*) = *crch*; *cavity* = *cv*; *light* or *slight* = *lg*; *parallel* = *prl*; *prominent* = *prm*; *traversed* = *trv*.

44. The qualificatives of position: *apart* (or *distant*), *dst*; *situated*, *st*.

45. The metric substantives *centimetre* and *millimetre*, when they could not be indicated by deduction conformably to the directions of paragraph 18, page 218, will be represented respectively by the letters *cm* and *mm*.

46. The peculiarities: *fossette* or *dimple* = *fst*; *navus* or *mole* = *nv*; *variola* or *small-pox* = *vrl*; *point* = *pt*.

47. The abbreviations of this category that it remains for us to enumerate all relate to the parts of the body. Here is a list of them, arranged in conformity with the directions of paragraph 9 on page 222 :

I and II. Upper Limb (left and right)

biceps	<i>bcp.</i>
cubital (humero-cubital articulation, or elbow)	<i>cb.</i>
wrist (already mentioned, Fr. <i>poignet</i>)	<i>pg.</i>
finger, or digit	<i>dgt.</i>
palm	<i>pm.</i>
base of thumb or pollex	<i>bs. P.</i>

III. Face and Front of Neck

face or visage	<i>vsg.</i>
hair (Fr. <i>cheveux</i>)	<i>chvx.</i>
forehead	<i>fr.</i>
frontal boss	<i>bs. fr.</i>
eyebrow, or supercilium	<i>src.</i>
eyelid (Fr. <i>paupière</i>)	<i>pp.</i>
angle (of the eye), etc.	<i>gl.</i>
nostril	<i>nr.</i>
cheek-bone (Fr. <i>pommette</i>)	<i>pmt.</i>
tragus	<i>trg.</i>
mouth (Fr. <i>bouche</i>)	<i>bc.</i>
maxillary, or jaw-bone	<i>mx.</i>
larynx	<i>lrx.</i>

IV. Chest

fork (Fr. <i>fourchette</i>)	.	.	.	.	.	.	frc.
clavicle	.	.	.	.	.	.	clv.
teat, or nipple	.	.	.	.	.	.	tt.
sternum	.	.	.	.	.	.	str.
umbilicus, or navel	.	.	.	.	.	.	mbi.
median, or median line	.	.	.	.	.	.	md.

V. Back of Neck and Region of the Back

seventh vertebra	.	.	.	.	.	.	7°
(spinal) column	.	.	.	.	.	.	cl.
omoplate, or shoulder-blade	.	.	.	.	.	.	ompl.

48. 4th. *Terms abridged according to the ordinary formula: consonants and vowels together.* Most of the abbreviations of this nature relate to the terms which determine the nature of the peculiarity, to-wit:

amputated	.	.	.	.	.	.	amp.
cicatrix, or scar	.	.	.	.	.	.	cic.
circular	.	.	.	.	.	.	circ.
furuncle, or boil	.	.	.	.	.	.	fur.
freckles (Fr. <i>rousseur</i>)	.	.	.	.	.	.	rouss.
scrofula	.	.	.	.	.	.	scrof.
tattooing	.	.	.	.	.	.	tat.
triangle	.	.	.	.	.	.	trigl.

We add the two opposite prepositions:

behind (Fr. <i>arrière</i>)	.	.	.	.	.	.	ari.
before (Fr. <i>avant</i>)	.	.	.	.	.	.	avt.

as well as the following parts of the body:

ear (Fr. <i>oreille</i>)	.	.	.	.	.	.	ori.
root of the nose (Fr. <i>racine du nez</i>)	.	.	.	.	.	.	rac.

APPENDIX

A. JUDICIAL PHOTOGRAPHY

GENERAL CONSIDERATIONS

The anthropometrical observations, corroborated by the statement of peculiar marks and by the descriptive information for the face, are amply sufficient to assure the identification of any individual who, after *having been measured for the first time at an adult age*, might come to be arrested and remeasured at some later time, no matter how many years may separate the two operations.

But this does not hold good when the **FIRST** signalment has been taken while the subject was under twenty years of age.

The adding of a photographic portrait to the signalment becomes then so much the more necessary the further towards infancy it is desired to carry the investigation of the identity. It should be admitted that as a rule it is **difficult** to pursue a *verification* in the anthropometrical archives further back than the twenty-first year, and **absolutely impossible** beyond the eighteenth year, without the aid of a profile photograph from the right side.

And again it is desirable that the photograph annexed to the signalment should conform as much as possible to the well-defined, uniform type adopted according to my indications for the central archives of the identification service.

It is to the exposition of the rules defining this type of photograph that this appendix is devoted. The professional photographer or the mere amateur who will observe these rules will find it exceedingly easy to attain the desired result.

If special reasons, and particularly the resistance of the subject, should prevent their strict observance, all efforts must be concentrated on the securing of a *profile or three-quarters print* from the *right side*, reproducing the details of the ear. The pattern of the

RIGHT ear is in fact (together with the color of the iris) the best and almost the only element of identification which is offered by minors of less than eighteen years. An instantaneous portrait will always be much easier to take in profile than in full face.

In lack of a photograph it should be endeavored to make a drawing or even a mould or impression of this same ear. A sketch, again, even poorly executed by a person of little skill in drawing but having a sufficient knowledge of the morphological anomalies of the ear, might, in lack of better, take the place of photography.

TECHNICAL INSTRUCTIONS

1. Each subject should be photographed, 1st, in full-face, and, 2nd, in profile from the *right side*, under the following conditions: a) of *light*, b) of *reduction*, c) of *pose*, and d) of *mounting*.

a) LIGHT

2. The light for the full-face pose should come from the left of the subject, the right side remaining in comparative shadow.

3. The light for the profile pose should fall perpendicularly upon the subject's face.

b) REDUCTION

4. The scale of reduction adopted for the judicial photograph, both full-face and profile, is ONE-SEVENTH. In other words, the number of the objective should be chosen in such a way, and the distance between the objective and the posing-chair so arranged, that a length of 28 centimetres passing vertically through the external angle of the left eye of the subject to be photographed gives on the plate an image reduced to 4 centimetres, within a millimetre more or less ($4 \times 7 = 28$).

5. It is on the *external angle of the left eye* that the apparatus should be focused for the full-face photograph; while for the profile photograph the *external angle of the right eye* is taken, these two parts corresponding respectively to the most illuminated median position of each pose.

6. To find quickly the relative position of the chair and the apparatus which determines this scale of portrait, seat a willing subject of medium build in the posing chair very squarely and with his face to the camera, making him hold *vertically*, in the plane of his face, against the outer corner of his left eye, a slender wooden rule on which a strip of white paper 28 centimetres long has been previously glued. The photographer, on the other hand, holding in his hand a bristol-board card 4 centimetres wide, should move his apparatus farther away or nearer until the 28 centimetres of

the rule gives on the ground glass of the camera an image reduced to 4 centimetres, as he can readily assure himself by placing his bristol-board card upon it (1).

7. In order to avoid the necessity of any experimenting at later sittings it will be sufficient to fix once for all on the floor of the studio two small cleats, which will allow the chair and camera to be replaced immediately in their respective positions.

c) POSE

8. It is absolutely indispensable that in both poses for judicial photographs to be used for identification the subject should be bareheaded.

9. If for reasons peculiar to the case it should be necessary for the subject to be also photographed *with his hat on*, this last pose should be made the object of a third photograph, which it will then be very advantageous to take at full length, in conformity with the instructions that will be given in paragraph 25.

10. Take care that in both poses, the full-face and profile, the subject is squarely seated, his shoulders as much as possible at an even height, his head resting against the head-rest and his look *horizontal*, directed straight before him.

11. In the full-face pose, the subject should be caused to fix his eyes steadily on the camera, which will usually create no difficulty. In the profile pose, one can avoid the very frequent displacement of the eye sideways in the direction of the operator by asking the subject to look at some fixed point or, still better, at a mirror placed in a line with his face as far away as the width of the room will permit and at the same height as the objective, that is, at about 1^m 20 above the ground.

12. *Adjustment of the image on the plate.* It is strictly forbidden to "plunge" or "raise the nose of" the camera.

As the optical axis of the objective should always remain horizontal and the plane of the ground glass or sensitive plate vertical, the adjustment can be regulated only by the vertical displacement of the optical apparatus effected by means of the crank or lever of the camera.

Thus the image of the top of the head, in order to appear properly on the plate, should be brought to 35 millimetres below the center of the plate, which leaves only one centimetre of light above the image, when the 9 x 12 size is employed.

(1) Here is the theoretical solution of the same question: we know that the interval between the diaphragm and the object, or more exactly between the *center* of the objective and the part of the object chosen for the focus, is equal to the focal length of the objective used multiplied by the reduction number increased by one.

On this principle, supposing an objective to have a focal length of 32 centimetres, the distance which should separate its diaphragm from the external angle of the eye will be equal to 2 m. 56 (0.32 x 8=2.56).

13. Moreover, it is strongly recommended, before regulating the placing on the plate, to *decentralize* the camera 18 millimetres downwards, so that the optical axis of the apparatus passes approximately through the middle of the space of 35 millimetres reserved for the face. This decentralizing necessarily results in bringing the objective to the height of the subject's eyes, that is to say, the ordinary position of the human vision.

14. For the profile pose turn the chair 90° *from right to left*.

Place the subject *completely in profile* so that, seen from the apparatus, the head, the body and the top of the chair-back all appear entirely in a side view.

15. Before proceeding to the actual taking of the profile portrait, take care to verify and correct, if necessary, the figure of the reduction, which should then be regulated, as has been said above, on the vertical plane passing through the external angle of the right eye.

The special posing chair, which will be described further on, renders these preliminary verifications unnecessary by allowing the scale of reduction for both poses and the lateral adjustment to be regulated once for all.

16. As part of the value of the profile portrait consists in the indication of the slope of the forehead, one should take care to have the prisoner push back any locks of hair which might hide his forehead.

17. The ears should always be disengaged from the hair, in both the profile and full-face portraits.

To obtain this result in certain cases of shaggy and unkempt hair it will sometimes be necessary to confine the hair either with a piece of twine or a rubber band (for the profile pose only).

18. *Profile* photographs in which the contour of the ear does not appear in its entirety will have to be taken over again.

d) SIZE AND MOUNTING OF THE PRINTS

19. The prints should be cut at about 8 millimetres above the hair and pasted on a sheet of bristol-board, the profile on the left and the full face on the right. As much of the bust should be left as the height of the negatives will permit, perhaps between 8 and 9 centimetres, and nothing should be cut off from the width of the shoulders in full face photographs.

20. By employing a suitable *multiplier* the two poses may be grouped on the same card of 9 x 13 centimetres, obtained by cutting a card of 13 x 18 in two. The base thus measures 130 millimetres, of which 72 are devoted to the face and 58 to the profile.

GENERAL OBSERVATIONS

21. *The plates should never be retouched in any way*, with the exception of the hollows or pricks in the gelatine, which would produce on the print black spots resembling a mole or a scar. Any embellishment or rejuvenating

of the image by effacing on the plate the wrinkles, scars and peculiarities of the skin is strictly forbidden.

22. In the photographic department of the Parisian Prefecture of Police, to avoid confusion in the transcription of the names and to facilitate the subsequent classing of the negatives, a provisional serial number is given to each of them, according to the order in which the subject was entered on the daily list of photographs to be taken. The numbers are printed on loose tickets of about 3 centimetres in width and are slipped one after another into a pocket placed on the top of the back of the chair seen from one side.

23. This indication reproduced on the negative by photography itself allows one, by referring to the list for the day, to immediately find again the name of the subject, which is then written on the gelatine in reversed letters underneath the profile. The date of the making of the negative is placed immediately after, written in figures in the usual order; *day, month, year*. Finally, under the full face portrait, there is traced, farther towards the right, the general serial number which is to determine the definite placing of each negative in the archives (1).

FULL LENGTH PORTRAITS

24. *Full length* portraits, which are little used in judicial inquiries, should be taken only on the express request of the court.

25. For this kind of portrait, the photographer should place his subject in somewhere near a three-quarter pose, the left side by preference, being very careful not to cause any constraint in the attitude of the individual. With this in view, he should tell him in an off-hand way to put his hat on, and will thus seek, without awakening his distrust, to get him to place his hat on his head as nearly as possible in the same manner in which he usually wears it. Then the photographer should place beside his subject some objects appropriate to his social condition and selected with a view to give, by comparison, some idea of his height, such as a bureau a café table, a chair, etc.

26. The reduction to be observed is $1/21$ for the $9/13$ size, or $1/14$ for the very rare cases where recourse is had to the album size.

27. Whatever may be the pose and the reduction employed, a special heading should always give the figure for the latter, either at the side or the back of the print.

(1) Dr. Lande, professor of medical jurisprudence and deputy mayor of Bordeaux, who directed the organization of a municipal anthropometrical service in that city, has ingeniously replaced the inscription on the negatives in reversed writing (which requires some practice) by a direct inscription on a band of transparent paper, which is then turned over and pasted on the gelatine. The result obtained is excellent, if not better than with the direct writing.

SPECIAL POSING CHAIR (1) MECHANICALLY ASSURING A UNI-
FORMITY OF REDUCTION BETWEEN FULL-FACE
AND PROFILE PHOTOGRAPHS

THEORETICAL CONSIDERATIONS

The dimensions of the seat (width 25 centimetres, depth 25 centimetres, concavity of the back 2 centimetres) are purposely very limited in order to allow the subject as little latitude as possible in the manner of seating himself, forcing him to sit exactly in such a manner that his spinal column is supported by the back of the chair. For the same purpose, a projecting border, slightly sharp, surrounds the seat and induces the subject to instinctively correct his position if at first he has seated himself a little sideways. As a final precaution a metal arrow set into the middle of the upper edge of the chair-back enables the photographer to see at a glance while adjusting the head-rest whether the middle of his subject's back, indicated by the seam of the coat, coincides with the median plane of the chair. If not, instead of trying to rectify the position by a lateral movement of the body more or less forced, he should ask the subject to *stand up* and then immediately afterwards to *sit down squarely*.

It is quite evident that under these conditions, once the optical axis of the apparatus is directed perpendicularly to the middle of the chair, every subject who comes and sits down there may be photographed immediately in a front view without any "adjustment" having to be made *laterally*. The only individual adaptation that has still to be made is to regulate the height of the objective proportionately to that of the subject's bust.

The reduction figure for any one objective depending only on the distance which separates the apparatus from the object to be reproduced, the immobility of the seat results in assuring at the same time the *uniformity* of the scale.

This last is established and regulated once for all on the anthropometrical principles which we are about to present.

We recall, in the first place, that the scale of reduction should be calculated on a plane parallel to the sensitive glass and passing through the object chosen to regulate the focusing of the image, and that the spot prescribed for this operation, as regards the full-face portrait, is the external angle of the left eye (§§ 4 and 5, p. 240).

(1) Thanks to the simplification of the process by the use of this chair, a single officer is enabled to take daily, in the space of two hours and without assistance of any kind, from fifty to eighty negatives, each one of two poses side by side and under conditions of the most rigorous uniformity.

Now, accurate measurements taken on thirty subjects of various builds have enabled us to fix upon 19 centimetres as the average distance which separates the corner of the eye from the back of the chair.

The determination of this anthropometrical fact enables us to make the reduction in a uniform, and in a certain sense an impersonal, manner. It is evident that it would be much more exact and more simple to replace "the 28-centimetre rule held by a willing subject of medium build" (§ 6) by a larger rod, held vertically at 19 centimetres in front of the chair-back. In this way the calculation for the reduction will escape the errors arising from differences of individual build, which otherwise would require the rule to be more or less advanced according to the subject. Finally, it will be more exact in proportion to the length of the rule upon which it is found practical to base it.

After the examination of the conditions which mechanically regulate the placing on the plate and the reduction of the full-face portraits, we pass to the study of the profile photographs.

The instructions prescribe that these latter should be focused on the external angle of the right eye. Now, we may suppose, for reasons of symmetry, that the full-face portrait has been focused on this side. If the instructions have designated for this pose the left eye, it is on account of the prescribed direction of the light which should leave the right eye in shadow. But it is evident that every full-face picture focused on the left eye will be so at the same time on the right eye, and that this latter position may be regarded as being the only focal axis of the two poses,

The conclusion from this begging of the question is that it would suffice in theory, in order to pass rapidly from the full-face pose to the right-hand profile pose without having to disturb either objective or focus and without subsequent reduction, to turn the chair with the subject 90° , taking as axis of rotation the vertical line passing through the external angle of the *right* eye.

Nothing is easier to determine than the position of the projection of this point on the seat. In the first place it goes without saying that, by the definition, it must be contained in the plane of adjustment which passes through the eyes and which, as we have said before, is 19 centimetres distant from the back of the chair. On the other hand, any one can observe that the interval which separates the outer corner of the eye from the median line (or more precisely from the ridge of the nose) is equal to about 5 centimetres, and that this dimension varies very little from one individual to another. Consequently, the position of the vertical projection of the outer corner of the eye on the horizontal surface of the seat will be geometrically determined by the intersection of the parallel drawn at 19 centimetres from the bottom of the back of the chair with that drawn five centimetres to the right of its median line.

Nevertheless if, passing from theory to practice, we should seek to take a profile portrait immediately after a full-face pose by turning the chair precisely on this axis, we should observe this fact, which can easily be explained however, that the new image obtained, while continuing to be in focus, would cease to be on the plate, and that the back and part of the rear of the head of the profile would fall beyond the limits of the ground glass.

Hence the necessity, if one wishes to succeed in preserving the necessary immobility of the objective, after having turned the chair 90° , of *pushing it forward* a distance which experience shows to be 16 centimetres (1).

This double movement, the rotation of 90° and the advancement of 16 centimetres, may be combined and executed simultaneously by placing the axis of rotation *eccentrically*.

A very simple geometrical construction furnishes the solution of this elementary problem in mechanics.

Another consequence of the immobility of the optical apparatus combined with the geometrically assured fixity of the axis of rotation of the chair, is that this latter returns at each pose to the same position on the ground-glass and the sensitive plate.

Advantage has been taken of this circumstance, as we have seen in paragraph 22, to fix at the top of the back the small metal pocket destined to contain the serial number of each plate, which is thus uniformly and mechanically reproduced at the bottom and to the right of the profile picture. By increasing the height of the ticket a little, it may easily be made to contain, also, the name of the subject and the date of the taking of the photograph. But this arrangement, which would avoid the inscription in reversed writing, would somewhat disfigure the profile image.

Lastly, the profile of the back, the height of which has been fixed at 95 centimetres, bears a centimetrical graduation decreasing from top to bottom, which has been so arranged as to permit of ascertaining from the photographic print the height of the trunk of the subject photographed.

This information is indicated by the black line drawn photographically on the gelatine across the image of the graduation on the back by means of a needle fixed on the negative frame at 74 millimetres above the lower edge of the plate.

This mechanical measurement of the trunk should coincide, within a centimetre more or less, with that resulting from the direct anthropometrical observation. Should a noticeably greater divergence take place, it should be attributed either to an error on the part of the anthropometrical operators, or, much more reasonably, to a transposition of the movable number on the back or of the names and inscriptions subsequently traced on the gelatine. This, then, is a valuable means of making sure that the name, the signalment, and the photograph are attributed to the individual to whom they really belong.

To the posing-chair is attached a glass, on which the subject should fix his eyes during the profile pose. To enable it to be easily placed in any position it is supported on a stem of 1^m 50.

But the principal object of this accessory, called briefly *mirror-stand*, is to enable the photographer to more easily obtain an exact profile pose of the subject. All he needs to do is to place himself behind the latter and, at the

(1) This advancement of 16 centimetres permits the using of any kind of camera and frame. The complete special apparatus, such as produced by our maker, reaches an adjustment to the plate, and especially a *point of view*, more exact by reducing the advancement to 5 centimetres, and consequently placing there the arresting notch of the frame.

same time that he adjusts the head-rest, to arrange his face in such a way that the image reflected in the glass appears to him as completely and exactly in full-face. He may then be assured, without any other verification, that it will as a result appear quite as accurately in profile in relation to the optical axis of the objective.

This stem serves besides as a support (on the vertical line passing *through the middle of its back*) to a standard 49 centimetres high, bounded by two horizontal threads and two median lines, intersecting each other at a right angle, which permit the regulation of the adjustment to the plate and of the reduction, without needing an assistant to hold the standard-rule.

The following directions summarize the management of the optical apparatus, the posing-chair and its various accessories. They should be reproduced in duplicate and glued *spadewise* to the back of the *mirror-stand* furnished by the manufacturer conformably to our models.

They are put together in such a way as to regulate all the preliminary arrangements for a photograph out of sight of the prisoner and before his introduction into the studio, an advantage not to be despised for assuring the final success of the operation.

PRACTICAL INSTRUCTIONS FOR THE INSTALLATION AND HANDLING OF THE POSING CHAIR

Draw upon the ground a straight chalk line about four metres long, parallel with the glass partition which lights the studio.

a) For the full-face photograph place the posing chair so that the light falls on it from the left side, the projection of the median line upon the hollowed plank which serves as a pedestal being itself exactly superposed upon the straight line of four metres prescribed above.

b) Arrange the mirror-stand vertically on the chair, the mirror turned towards the back, and the standard-interval of 49 centimetres looking towards the objective, in such a way that the two nails which go through the foot of the mirror-holder enter the corresponding holes of the chair.

c) Trace with a pencil upon a piece of ground-glass, placed temporarily in a negative holder, two median axes, one horizontal and the other vertical; measure with great precision on this latter a length of 35 millimetres above the center of the glass and another of the same dimension below, and mark the vertical interval of 7 centimetres thus obtained by means of two horizontal lines from 1 to 2 centimetres long.

d) Place horizontally the optical axis of the apparatus (which one must take care to have previously decentralized 18 mm towards the base), bring it to the height of the middle of the upper half of the standard-interval, that is to about 1 m 20 above the ground, and place it perpendicularly to this surface, so that the image of the central point, determined by the meeting of the two median lines traced upon the *standard-interval*, coincides with the center of the ground-glass.

e) Place yourself behind the ground-glass and advance or draw back the apparatus (and, if necessary, the chair), following the line marked upon the ground, that is to say, keeping the optical axis perpendicular to the mirror-

stand, until the 49 centimetres of the standard produces on the ground-glass in the camera an image superposed *exactly* upon the vertical interval of 7 centimetres indicated in paragraph *c*.

f) At the same time regulate the focusing of the image exactly here, in the middle of the copy of the present notice intentionally glued inside out upon the upper half of the 49^{cm} standard.

g) Fix the hollowed plank under the chair with four nails fitting tightly into the floor, and do the same for the feet of the optical apparatus by means of the special screws with which it is provided.

h) Take the mirror-stand away from the top of the chair and put it on the side from which the light comes, the mirror exactly opposite the middle of the chair when turned in the position it should occupy during the profile pose.

i) Seat the subject upon the posing chair and proceed to take the full-face portrait, according to the general directions: the axis of the optical apparatus, still horizontally placed (1), must be raised or lowered, according to the height of the subject seated, until the top of the image of the head just touches the horizontal line 2 centimetres long marked upon the ground-glass, in conformity with paragraph *c*, at 35 millimetres below the center of the plate.

j) Make the subject stand up, turn the chair 90° from right to left, raising it gently and taking care to prevent the vertical stem from coming out of its socket; make the subject sit down again in the new direction of the chair, telling him to look at himself in the glass of the mirror-stand, and proceed to take the profile photograph, without in any way displacing the optical apparatus laterally, but raising or lowering it, if necessary, so that the image in profile is projected upon the ground-glass on absolutely the same level as that in full-face.

k) *Remarks.* It sometimes happens, in the case of subjects very much bent or very obese, that the profile portrait taken in this way is carried too far forward and goes outside the plate.

In such cases make the subject lift up his head until it reappears within the frame, even if there should result a somewhat forced position which, however, could in no way alter either the pattern of the ear or the line of the silhouette.

(1) The apparatus made especially for judicial photography are decentralized in the prescribed degree and arranged so as to be always horizontal. They are also furnished above with a kind of large finder, made outwardly like a telescope, which enables the adjustment of the height of the plate to be directly regulated, without having recourse to the ordinary ground-glass holder.

B. THE VERBAL PORTRAIT

We give the name of *verbal portrait* to the minute description of an individual made especially with a view to seeking and identifying him on the public street.

The officer should be able to repeat this particular signalment on the spur of the moment and without hesitation; hence its name of verbal portrait. And yet that of *written portrait* would suit it quite as well, since, before being learned by heart, it ought to be drawn up with the mind in repose and committed to writing.

The term does not refer to the more or less vague indications gathered from incompetent witnesses and which must be recorded as given for want of opportunity to verify them, but to an accurate description in appropriate terms, compiled from documents of indisputable authenticity, such as a photograph of the judicial type (profile and full face), or, at least, a signalment card.

The physiognomical analysis should always be completed, as soon as the materials for it are in hand, by the interpretation (from a descriptive point of view) of the anthropometrical part of the prison signalment; that is to say, of the part which is usually the most exact and the least open to dispute.

The observations will be written on special *cards*, the whole upper half of which is reserved for the photograph, which is thus protected from soiling or injury by the lower half which folds over it. As a result the card when closed is reduced to half size, and can be easily carried in the coat pocket.

The cover, or lower half of the card, bears on the front or *recto* the headings which make up the verbal portrait for the first two parts of the signalment (anthropometrical and descriptive), so that the reader is enabled to readily compare each term in the description with the corresponding part of the photographic portrait, when he has access to it, while the back (or *verso*) is devoted to the statement of peculiar marks and to the sociological information.

If the photograph is of the standard type (profile and full-face) the drawing up of the verbal portrait will be easy. The task is more delicate when one possesses only a commercial portrait, generally a three-quarters view, but it should nevertheless be pursued according to the same plan.

The large synoptical table of the descriptive information, placed at the end of the second part of the *Album*, has been composed mainly with a view to serving as a guide in the drawing up of these notes (plate 60c).

The scheme of headings printed on the special model of card for the verbal portrait (plates 80 and 81) affords a summary sufficient for obtaining uniformity in the placing of all the observations, and for calling them to mind when needed, without the necessity of entering into many explanations on this subject.

The headings for the profile: *forehead, nose, chin, lips*, and, if possible, *ear*, should be filled in and learned by heart in their entirety, while the headings relating to the front view are replied to only when the feature examined clearly departs from the mean, which is as much as to say that three-quarters of the headings of the third horizontal division will be answered only by dashes.

In short, the establishment of a verbal portrait is equivalent to a more extended choice of characteristic traits, or, as we have explained above, to a methodical selection of the characters which are most likely to be remembered. The compiling of a verbal portrait may be compared, in the same order of ideas, to the creation in the officer's mind of a kind of caricature of the person to be recognized. What is a caricature, indeed, if not the combined selection and exaggeration of the characteristic traits? The results obtained by this proceeding from the point of view of identification are known to all. To whom has it not happened, for example, to recognize immediately some well-known personage by means of a caricature alone, which, in such a case, showed itself superior to the best of photographs? The rule might then be laid down that the verbal portrait should give first place to the same physiognomical features as those which would be emphasized by the caricaturist.

If a previous anthropometrical signalment exists, the PECULIARITIES should be recopied from it, in such wise that, in case of arrest and denial of identity on the part of the person concerned, the comparison of them may be made immediately, on the subject

present. But care should be taken to indicate by a small sinuous line traced vertically on the margin (see plate 81) the marks which one may have reason to suppose sufficiently apparent to be easily verified before the arrest, without the individual's knowledge. Such are the marks on the face noted in No. III, and sometimes those on the hands (see note on page 64 of the *Introduction*). Only the marks thus noted will need to be learned by heart.

The translation of the ANTHROPOMETRICAL OBSERVATIONS into descriptive terms necessitates more detailed explanations.

The exact indication of the height and of the trunk in centimetres should always appear, and these figures should be learned by heart. The only precaution to be taken will be to increase the figure of the centimetres by one when the millimetres reach or go beyond the fifth.

The other anthropometrical observations should also be copied in their entirety, but only the values extreme or eccentric, either by deficiency or excess, will then need to receive the officer's attention.

The divergency of a length from the *average*, which is shown in the accompanying table on page 254 (1), is measured by means of a special value called the *divergency from half the cases* (or more shortly, simple divergency) (2). This fundamental value is indicated for each measure in the table at the top of its respective column.

If an eccentricity amounting to a *simple divergency* is enough to very considerably augment the recognitory value of a signalment from the point of view of anthropometry and of identification in the measuring-room, it has but little importance from the point of view of descriptive signalment and of identification on the public street.

(1) We may say in passing, and to prevent any future misinterpretation, that this table, which gives the median or probable dimensions corresponding to a given height, cannot be employed for the reciprocal problem, which consists in finding the probable height corresponding to a given dimension.

(2) This appellation, *divergency from half the cases*, is derived from the fact that this value, added or subtracted from the figure of a medium dimension, determines the limits of the central group, which includes half of the cases observed.

Values of this kind must not be confounded with the figures of the table on page 24 of the *Introduction*. These latter refer to the error in measuring, that is, the amount of variation which there can be in an osseous length measured at different times on the same individual, while the table opposite relates only to the *divergencies in length* which a certain measure may present among a group of 1,000 subjects of the same height (see also the foot-note on page 29 of the *Introduction*).

So therefore the divergency from half the cases is only mentioned in the table on p. 254 on account of the part it may be called to play in cases of disputed identity before the courts (see *Introduction*, p. 31).

The total height, the height of the trunk, and the length of ear excepted, an anthropometrical length becomes useful in descriptive signalment only at about two and a half times the simple divergency above or below the medium. Values of this degree are so exceptional as to be only met with in one case out of ten, hence they are designated as *divergencies from 9/10 of the cases*. The figure will be found all calculated on the table, beneath the divergency from half the cases.

The fact that the anthropometrical anomaly reaches the divergency from 9/10 of the cases is indicated on the card for the verbal portrait by underlining the value which is *notably too large*, while the value *notably too small* is placed in parenthesis. The sign, underlinement or parenthesis, will be *doubled* if the divergency above or below extends to more than three and a half times the divergency from half the cases, that is to say, when it exceeds the sum of the two preceding divergencies (that from $\frac{1}{2}$ plus that from 9/10 of the cases). An abnormality of this importance is observed only in one case out of fifty.

Finally, every value which exceeds five times the divergency from half the cases should be regarded, until the contrary is proven, as the result of an error. These last values will be found mentioned in the table under the heading: *divergency from all the cases*. This degree of eccentricity, which is observed less than once out of a thousand cases, should on occasion be underlined three times.

Let us take as a practical example the following anthropometrical signalment, which is that of a murderer recently arrested in Paris:

Height 1 ^m 66.3	Head {	length 18.6	Foot <u>27.9</u>
Reach <u>1^m 78</u>		width 15.7	Middle f. <u>12.2</u>
Trunk 87.7	Ear {	length 6.2	Little f. 9.7
		width (3.2)	Forearm 46.6

There is nothing to be said of the height of 1^m 66, which only exceeds the average by the insignificant amount of one centimetre.

The average reach corresponding to this height is of $r = 69$; that of our subject is $r = 78$, or 9 centimetres in excess. Now the divergency from $9/10$ is for this measure 7 centimetres; the reach signalized is therefore *very large*, without being *extraordinarily large*, and we underline it once.

The trunk is of 88 , or about the average for this height. Neither is there any remark to be made regarding the diameters of the head and the length of the ear, which are little removed from the medium. But it is otherwise with the width of ear, which is 5 millimetres less than the medium. This is an eccentricity by defect which reaches the divergency from $9/10$, so we place the figure for the width of ear in parenthesis.

Let us pass to the examination of the figures of the third column: the foot of our subject, which is of 27.9 , exceeds the ordinary foot of persons of his height by 21 millimetres, that is to say, by an amount greater than the divergency from $49/50$, which is 20 millimetres. This foot then is of an extraordinarily great dimension, such as would be met with in only two specimens out of a hundred. Conformably with the rule precedingly given, we mark it with a double line drawn beneath the number.

The middle finger of our signalment is of 12.2 , longer by eight millimetres than the middle finger in the table, that is to say, by an amount greater than the divergency from $9/10$, but less than that from $49/50$. It is the same in the case of the little finger. The fingers of the hand are then remarkably large without being almost monstrous like the foot. They should be underlined with only one mark.

As for the forearm, 46.6 , it is larger than the average only by 14 millimetres, that is to say, by a quantity greater than the simple divergency but less than the divergency from $9/10$. This indication does not then reach in this case a degree of eccentricity sufficient to make it useful in the descriptive signalment.

In short, our subject is distinguished in an altogether exceptional manner, from an anthropometrical point of view, by the length of his feet, and correlatively, in a lesser degree, by the length of his fingers, and it is probably this last peculiarity, combined with relatively broad shoulders, to which the eccentricity by excess in his reach must be attributed.

The height being determined centimetre by centimetre, the corresponding mean dimensions of the ten other measures of the signalment, with indication of the degrees of eccentricity (or divergencies) to which each of them is liable in different subjects.

HEIGHT centimetre by centimetre I	REACH 2	TRUNK 3	HEAD		EAR		FOOT 8	FINGERS		ELBOW 11	HEIGHT centimetre by centimetre I
			LENGTH 4	WIDTH 5	LENGTH 6	WIDTH 7		MIDDLE 9	LITTLE 10		
Divergency in + or in - (the height being given) from 1/2 from 9/10 from 49/50 from all of the cases	m cm	mm	mm		mm		mm	mm		mm	Divergency in + or in - (the height being given) from 1/2 from 9/10 from 49/50 from all of the cases
	m cm	mm	mm	mm	mm	mm	mm	mm	mm	mm	m cm
1.45	1.49	804	180	150	58	35	230	102	80	398	1.45
1.46	1.50	808	180	150	59	35	231	103	80	400	1.46
1.47	1.51	813	181	150	59	35	232	103	80	403	1.47
1.48	1.52	817	181	151	59	35	234	104	81	405	1.48
1.49	1.53	821	182	151	59	35	235	104	81	408	1.49
1.50	1.54	825	182	151	60	36	236	105	82	410	1.50
1.51	1.55	829	183	151	60	36	238	105	82	413	1.51
1.52	1.56	832	183	152	60	36	239	106	82	416	1.52
1.53	1.57	836	183	152	60	36	241	107	83	418	1.53
1.54	1.58	840	184	152	60	36	242	107	83	421	1.54
1.55	1.59	843	184	152	61	36	244	108	84	423	1.55
1.56	1.60	847	185	152	61	36	245	108	84	426	1.56
1.57	1.61	851	185	153	61	36	246	109	85	429	1.57
1.58	1.62	854	185	153	61	36	248	110	85	431	1.58
1.59	1.63	858	186	153	61	36	250	110	86	434	1.59
1.60	1.64	862	186	153	62	36	251	111	86	437	1.60
1.61	1.65	866	186	153	62	36	253	111	86	439	1.61
1.62	1.66	869	187	154	62	37	254	112	87	442	1.62
1.63	1.67	873	187	154	62	37	255	112	87	444	1.63
1.64	1.68	876	187	154	62	37	256	113	88	447	1.64
1.65	1.68	878	187	154	62	37	257	113	88	449	1.65
1.66	1.69	882	187	154	62	37	258	114	88	452	1.66
1.67	1.70	886	187	154	63	37	260	114	89	454	1.67
1.68	1.71	889	187	154	63	37	261	115	90	457	1.68
1.69	1.72	895	187	154	63	37	263	116	90	459	1.69
1.70	1.73	899	188	155	63	37	264	116	91	462	1.70
1.71	1.74	902	188	155	63	37	266	117	91	464	1.71
1.72	1.75	905	189	155	64	37	267	117	91	467	1.72
1.73	1.76	908	189	155	64	37	268	118	92	469	1.73
1.74	1.77	912	189	156	64	37	270	118	92	472	1.74
1.75	1.78	915	190	156	64	37	271	119	92	474	1.75
1.76	1.79	918	190	156	64	37	273	119	92	477	1.76
1.77	1.80	922	190	156	64	38	274	120	93	479	1.77
1.78	1.81	926	191	156	64	38	275	120	93	482	1.78
1.79	1.82	929	191	156	65	38	277	121	94	484	1.79
1.80	1.83	933	191	157	65	38	278	121	94	487	1.80
1.81	1.84	937	192	157	65	38	279	122	94	489	1.81
1.82	1.85	941	192	157	65	38	281	123	95	492	1.82
1.83	1.86	944	192	157	65	38	282	123	95	495	1.83
1.84	1.87	947	193	157	65	38	284	124	96	497	1.84
1.85	1.87	951	193	157	65	38	285	124	96	500	1.85

The osseous lengths are susceptible, as regards the descriptive signalment, of another kind of interpretation which, under certain circumstances, may become very useful: we mean the ascertaining, by means of an anthropometrical signalment, of the size-numbers and the approximate dimensions of the corresponding pieces of clothing.

We have indicated in a note to the Introduction (p. 18) the origin of these calculations and the rule to be followed in transforming an anthropometrical length of foot into shoemaker's pointing [i. e., the degrees of the size-stick] and vice versa. For the first case, the only one with which we need to concern ourselves here, from 12 to 20 millimetres are added, according to the presumable elegance of the shoe (1), and the sum multiplied by $\frac{3}{2}$. The result divided by 10 gives within a small fraction the number of the pointing on the size-stick.

The height of the crotch of a pair of trousers may be obtained in the most simple manner by deducting the height of the trunk from the total height. This difference will give exactly the inside length of leg of a pair of well-fitting trousers worn with suspenders, that is to say, a maximum length which, in practice, may *surpass* by from 2 to 4 centimetres, or even more, that which one is likely to meet with in poorly-dressed subjects (2).

The size of a stiff hat is calculated separately for the two diameters by deducting for each of them 145^{mm} from the corresponding figure given by the anthropometrical signalment and dividing the remainder by 6.25, the millimetrical value of the interval between the hatters' sizes.

The size of soft hats and caps is obtained by dividing by 2 the sum of the two preceding measurements (length and width for the stiff hat). Do not neglect to mention the half sizes. The sizes of the circumference of the head for a soft hat rise, in fact, by half-sizes from 0 to 8 $\frac{1}{2}$. Each increase by a half-size is exactly equivalent to an increase of one centimetre in the circumference. The size 0 corresponds to a distance of 47 centimetres around the head, the size $\frac{1}{2}$ to 48, the size 1 to 49, the size $1\frac{1}{2}$ to 50 centimetres, etc.

[The preceding paragraph applies only to hats of French make. The English size-numbers are intended to represent the diameter of the hat in inches, and therefore no deduction should be made from the cranial diameters furnished by the anthropometrical signalment. Add, on the contrary, 6^{mm} to each measure, and divide the sum by 25.40, the millimetrical value of the English inch, reducing any fractional remainder to 16ths or 8ths of an inch. Thus a head measuring 187 by 154^{mm} would be fitted with a stiff hat of size $7\frac{9}{16}$ by $6\frac{15}{16}$. American hatters make their stiff hats of a certain

(1) Twelve millimetres for round or square-toed shoes, and 18 to 20 millimetres for those with what are called pointed toes.

(2) To calculate the height of a subject from the height of the crotch of a pair of well-fitting trousers the inside length of the trouser-legs is multiplied by two, and to the product 8 or 10 centimetres are added for crotches of more than 0 m. 80; 10 to 12 centimetres for those (of medium dimension) of between 0 m. 75 and 0 m. 80; and 12 to 15 centimetres, or even more, for those less than 0 m. 75. The result will always be only approximative, and considerably too small in the case of trousers that are badly-fitting, that is to say, too short.

conventional form, and afterwards adapt them in the shop to heads of unusual proportions as required; and they therefore give them but a single number, which is calculated, as in the case of soft hats, by dividing by 2 the sum of their two diameters expressed in inches. The sizes for soft hats, on account of their elasticity, which causes them to stretch, usually run from two eighths to three eighths smaller than for stiff ones, so that a head of 187mm by 154mm would wear a stiff hat of size $6 \frac{15}{16}$ or a soft one of size $6 \frac{11}{16}$. Usually, especially in cheap hats, the eighths are the lowest fractions employed, so that the hats just mentioned might be numbered either $6 \frac{3}{8}$ (stiff) and $6 \frac{3}{8}$ (soft) or, more probably, 7 and $6 \frac{3}{4}$ (1).]

The indication of the size of the hat (distinguishing between the stiff hat and the soft hat) will be a valuable completion to the descriptive signalment for the verbal portrait, though too much attention should not be attached to this information, which personal caprices, the fashion, etc., may modify at pleasure.

PHOTOGRAPHIC IDENTIFICATION

The scrupulous observance of the rules of judicial photography described above assures to the different photographs of the same individual so many and such precise points of comparison that, no matter what physical changes have intervened between the various sittings, his identity may be established immediately and without hesitation. See in plates 59a and 59b, the facsimiles of profile and full-face portraits arranged one above the other in pairs relating to the same subject.

Although we have chosen the most striking *dissimilarities* which it was possible for us to obtain, the comparison of the fronto-nasal outlines and the morphological details of the ear, in the profile pictures, can leave no room for doubt as to the identity of the person; while the resemblance of the full-face photographs is largely destroyed here by a concurrent change in the hairy system and in the fleshiness of the subject (plate 59a, figs. 1 and 2),

(1) German hatters simplify matters very much by numbering each hat according to the number of centimetres in its circumference. Thus the head specified above as wearing an English soft hat of $6 \frac{15}{16}$ would wear a German hat number 55. The following table gives the equivalent sizes of stiff hats in the German, French, and English systems, for heads of medium sizes:

French Sizes diameter above $5 \frac{15}{16}$ inches in "points" or quarter-inches	}	$53 \frac{1}{2}$	54	$54 \frac{1}{2}$	55	$55 \frac{1}{2}$	56	$56 \frac{1}{2}$
German Sizes circumference in centimetres		$3 \frac{3}{4}$	$3 \frac{1}{2}$	$3 \frac{3}{4}$	4	$4 \frac{1}{4}$	$4 \frac{1}{2}$	$4 \frac{3}{4}$
English Sizes diameter in inches	}	$6 \frac{3}{4}$	$6 \frac{13}{16}$	$6 \frac{7}{8}$	$6 \frac{15}{16}$	7	$7 \frac{1}{16}$	$7 \frac{1}{8}$

or by a nervous contraction of the eyebrows (plate 59a, figs. 1 and 2), or a lateral deviation of the eyes (plate 59a, figs. 3 and 4).

The inverse problem, which consists in affirming the *non-identity* of the individuals in two photographs presenting a certain general resemblance in physiognomy, is solved with the same degree of ease and certainty by the comparison of the fronto-nasal outlines and the details of the ear.

Analogies of this sort may be ascribed to any one of the four principal causes following:

Similarities of $\left. \begin{array}{l} \text{professional} \\ \text{pathological} \\ \text{ethnical} \\ \text{family} \end{array} \right\} \text{origin.}$

Regarding the *professional* resemblance, of which we have already had occasion to speak, on page 211, apropos of the *general impression*, we will say only a few words. It consists entirely in the general appearance, the costume, the cut of the beard and hair, the mannerisms, etc. So it disappears at once in an anatomical examination.

Every disease has its aspect, its *facies*, as the doctors say, and the general resemblances resulting from it are greater in proportion as the organism is more profoundly stricken. Thus all persons whose respiration is affected, asthmatics, consumptives, etc., have their eyes more or less prominent and a general appearance of pain which tends to make them look alike.

But in no case is *pathological* resemblance more striking than when it results from some malformation of the bones. All hunchbacks, for instance, resemble each other; to the expression of difficult respiration they add a necessary resemblance in the carriage of the head and shoulders, etc.

Again, it is the cranial malformations, it need not be said, which occasion the most perfect physiognomical resemblances. All individuals with a "*shako-shaped*" head (plate 60a, figs. 1 and 2) or a *prominent chin*, popularly called "*jimmy-jawed*" (plate 60a, figs. 1 and 2), have a family likeness. Although these deformities may cause a similarity of the fronto-nasal outline, the ear always suffices to individualize the subjects. Thus the lobe in fig. 1 (plate 60a) is intermediate as to contour and adherence,

while that in the corresponding figure, No. 2, is square and blending. Similar remarks may be made regarding the lobes shown in the profiles 3 and 4 of the same plate.

Ethnic resemblances, that is to say, between foreigners of the same race, and especially those of an exotic race, are also deceiving. Thus, to the eyes of a European newly arrived in China all the Chinese look alike; the physiognomical differences do not become perceptible to him for many months. Without going so far for an example, it is a fact that the gypsies of our own country often present a great morphological analogy among themselves (plate 60*b*, figs. 1 and 2). This is because to their community of race there is generally added a relationship more or less near, either with or without the knowledge of the persons concerned.

Villages are not rare in France [and such occur even in the older portions of the United States] where the inhabitants, all relatives and resembling each other within certain limits, bear the same patronymic and are distinguished among themselves only by surnames. And yet up to the present time we have not found a single instance where this morphological resemblance, even between brothers, extended to the ear (without speaking of the still more conclusive differences of the anthropometrical signalment).

An exception should be made, as far as the ear is concerned, in the case of the twin brothers shown in plate 60*b*, figs. 3 and 4. In spite of the analogy of this organ, the non-identity of these two subjects is clearly demonstrated by a difference of six millimetres in their width of head. However, although we have not yet happened to meet with two twins who, besides this identity of ear, presented a concordant anthropometrical signalment, the metrical differences have often been so small that we must admit that such a coincidence is possible. In a case of this kind the identification would have to rest principally on the statement of peculiar marks.

It is unnecessary to remark that this exception (which we felt under obligations to point out) does not diminish in practice the recognitory value of photography and of anthropometrical signalment. The possibility of confounding one twin brother with another should not be taken into consideration except when the birth-registers actually show a double birth of the name and date indicated. This is manifestly not a commonplace line of defense within the reach of every one.

C. ADDITIONS TO THE ANTHROPOMETRICAL SIGNALMENT

(Circular issued by Dr. Bertillon in January, 1884)

I. MEASUREMENT OF THE BI-ZYGOMATIC DIAMETER

(To replace the measurement of the width of ear, see p. 116)

The term *zygoma* is applied to the bony band or arch which extends from the cheek-bone to just above the auditory orifice; and we understand by *bi-zygomatic diameter* the maximum horizontal distance by which the two zygomata are separated.

The bi-zygomatic diameter thus defined is measured with the caliper compass used for the measurement of the cranial diameters, and by following a similar course.

First Stage (plates 18 and 19)

The subject being seated on the stool, make him separate his legs and stand in front of him as close as possible. Hold the branches of the calipers near the points and place them symmetrically a short distance from the tragus. Make the instrument oscillate up and down and back and forth, at the same time moving it further and further from the tragus, and follow, on the graduation, the variations of the index-mark 0. As in the previous measurements, the observer ascertains the figure which would appear to him to correspond to the maximum distance.

Second Stage

Fix the branches of the compass at the figure found, conformably to the manner of operating indicated for the measuring of the cranial diameters.

Third and Last Stage

Replace the points of the compass on the zygomata and make sure by perfectly symmetrical oscillations, sometimes vertical and sometimes horizontal, that the compass has the proper opening, which may be recognized by the friction of the points, which should slightly wrinkle the skin.

Approximation: The greater or less thickness of the fatty layer covering the zygomata prevents the attainment of the degree of precision requisite in the measuring of the cranial diameters.

We would estimate provisionally the approximation of the bi-zygomatic measurement at 1^{mm} plus or minus.

II. DIGITAL IMPRESSIONS OF THE RIGHT THUMB, INDEX, MEDIUS [middle finger] AND ANNULAR [third finger]

Method of operating: Cover a sheet of polished copper with a very thin layer of printer's ink, as uniformly as possible, by means of a roller made of gelatine. Place the extremity of the anterior face of the subject's finger on this black slab, exercising a slight pressure, and transport the finger thus blackened on to the space reserved for this purpose at the bottom of the anthropometrical card. The impression is obtained by pressing lightly on the back of the finger. It is necessary to take the imprint of each finger *in succession*.

The space reserved for the recording of the filigrees of the fingers is found at the lower right hand-corner of the anthropometrical card. It measures about 95^{mm} by 45^{mm} and bears the indication of the fingers which should be printed (see plates 79a and 79b).

ALBUM

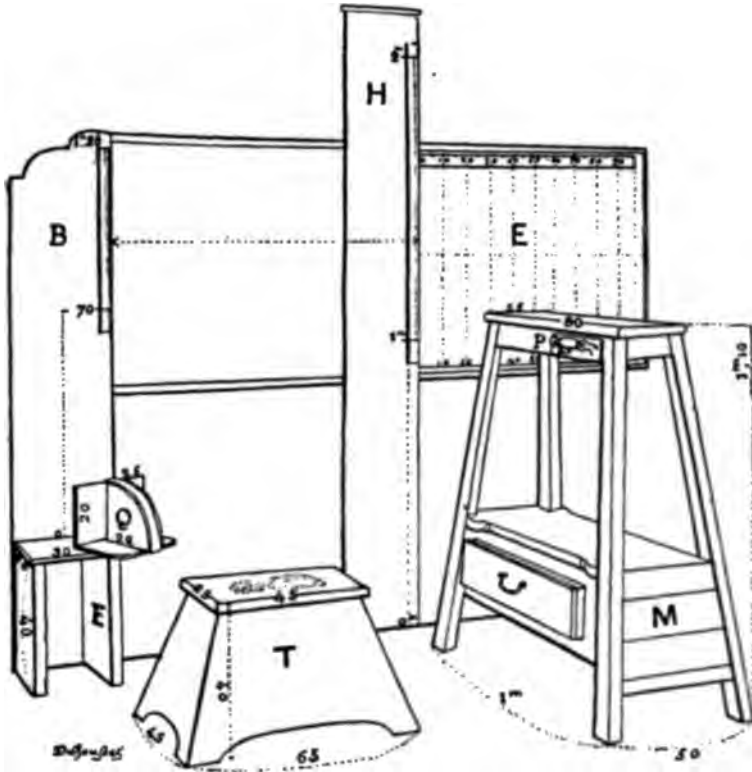
FIRST PART



PLATES RELATING TO
THE ANTHROPOMETRICAL OPERATIONS

MEASURING FURNITURE

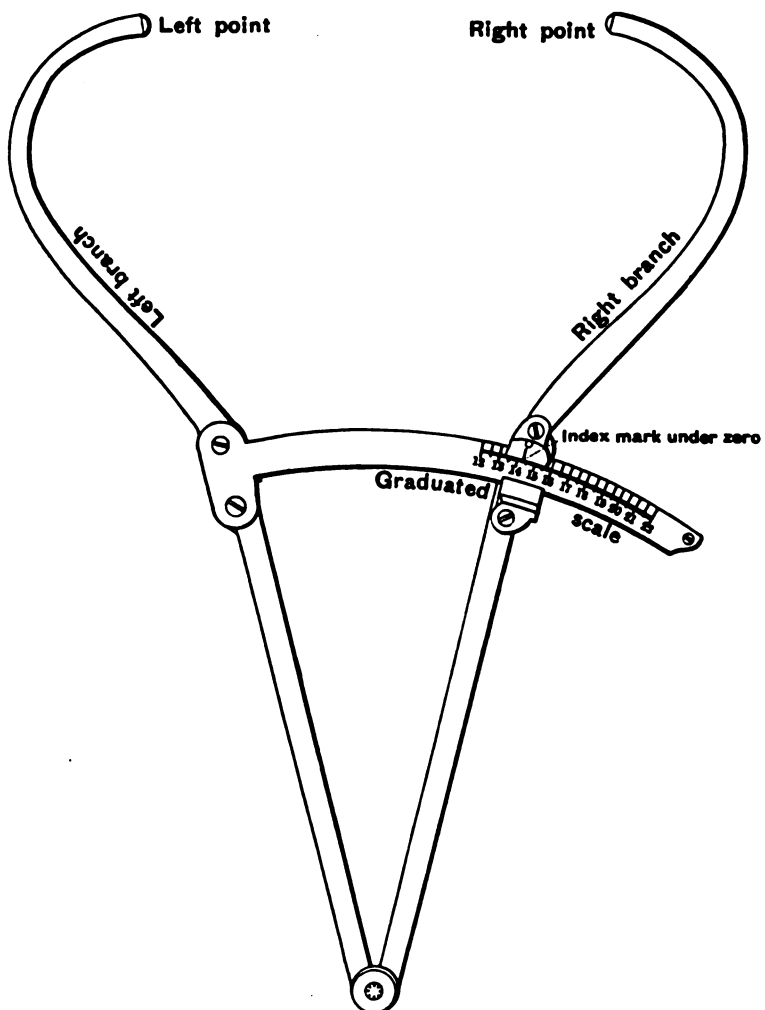
showing arrangement of mural graduations



- H.** — Vertical rule one metre long for measuring the height (*Instr.*, p. 100).
- E.** — Graduations on paper or oilcloth for measuring the reach (*Instr.*, p. 103).
- B.** — Rule half a metre long for measuring the trunk or height of a man seated (*Instr.*, p. 105).
- Q.** — Portable square with double projection, used in measuring the height and the trunk.
- E.** — Stool used in measuring the trunk.
- T.** — Movable foot-stool to facilitate the measuring of the foot, of the cranial diameters and of the ear.
- M.** — Trestle specially intended for the measuring of the forearm, and affording a point of support (P) to the subject during the measuring of the foot (*Instr.*, p. 118).

CALIPER COMPASS

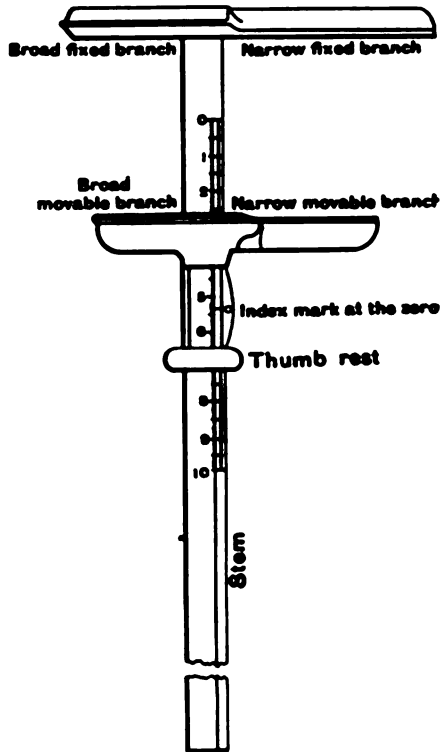
for measuring the length and width of the head



To read the indications of the instrument turn to the point directly opposite the zero mark drawn on the upper edge of the bolt. For example, the opening of the branches in the above drawing is about 1.5 cm 3mm.

SMALL CALIPER RULE

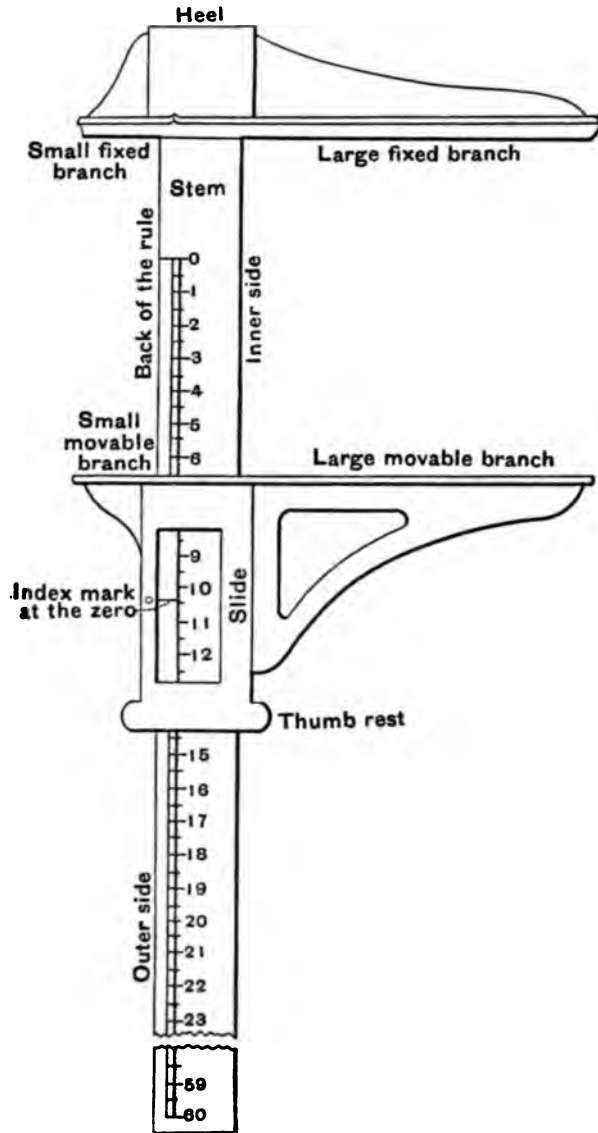
for measuring the length and width of the ear



To read the indications of this instrument turn to the point directly opposite the zero mark traced on the middle of the right edge of the opening of the slide. For example, the opening of the branches in the above drawing is about 5mm 3mm.

LARGE CALIPER RULE

for measuring the foot, the middle and little fingers and the forearm



To read the indications of the instrument turn to the point directly opposite the zero mark traced on the middle of the left edge of the opening in the slide or thumb rest. For example, the opening of the branches in the above drawing is about 10^{cm} 4^{mm}.

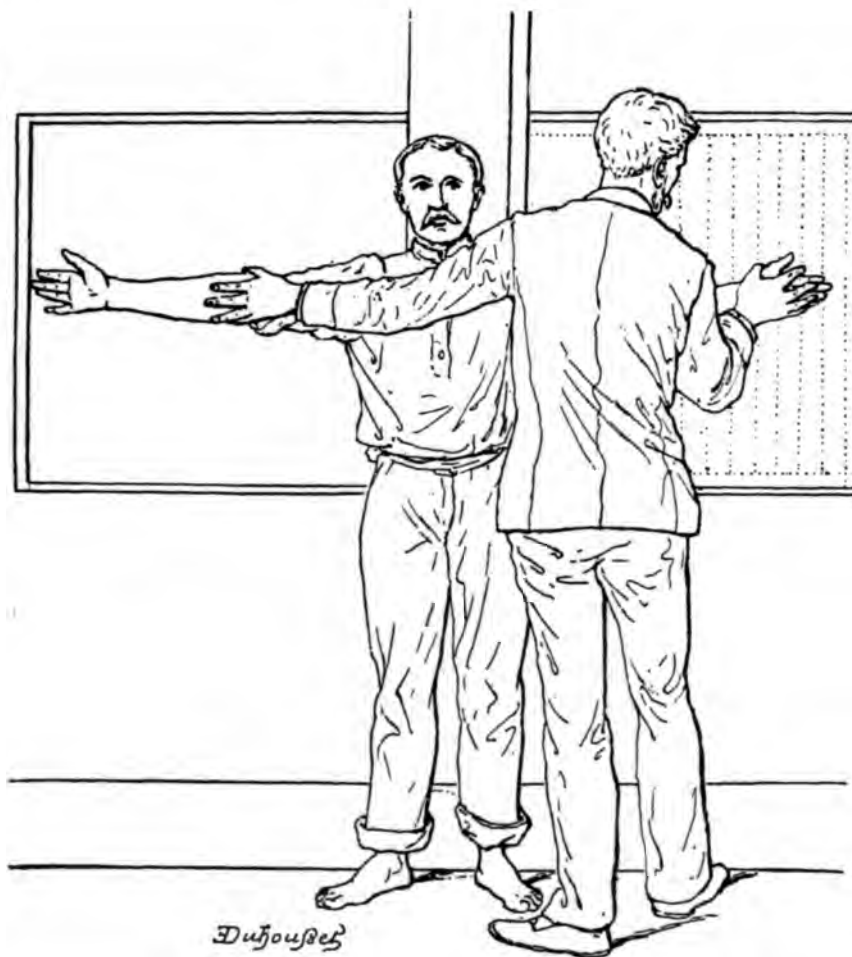
MEASURING THE HEIGHT

(Height of a man standing)



Place the subject against the wall, the *barbème* about 15cm to the left of the graduated metre (and not against the metre); bring the square down, the face with rounded corners downward, taking as a vertical guide the projecting edge of the metre, and then read the indications of the graduation without displacing the subject (*Instr.*, pp. 100 to 103).

MEASURING THE REACH



The subject, still having his back to the wall, is directed to extend his arms horizontally in the form of a cross, leaning if necessary either to the right or the left until the tip of his right middle finger touches the projection; then he regains his equilibrium by moving slightly outward the leg on the side toward which he has leaned, so as to make the line of his shoulders horizontal with the axis of his arms.

The measurer then presses the arms of the subject lightly against the wall, and makes sure, before dictating their figures, that the tip of the middle finger continues to touch the starting-point of the graduation (*Instr.*, p. 103).

MEASURING THE TRUNK

(Height of a man seated)



Make the subject sit squarely on the stool, see that he holds himself erect, and place and manipulate the portable square in the same manner as in measuring the height (*Instr.*, p. 105).

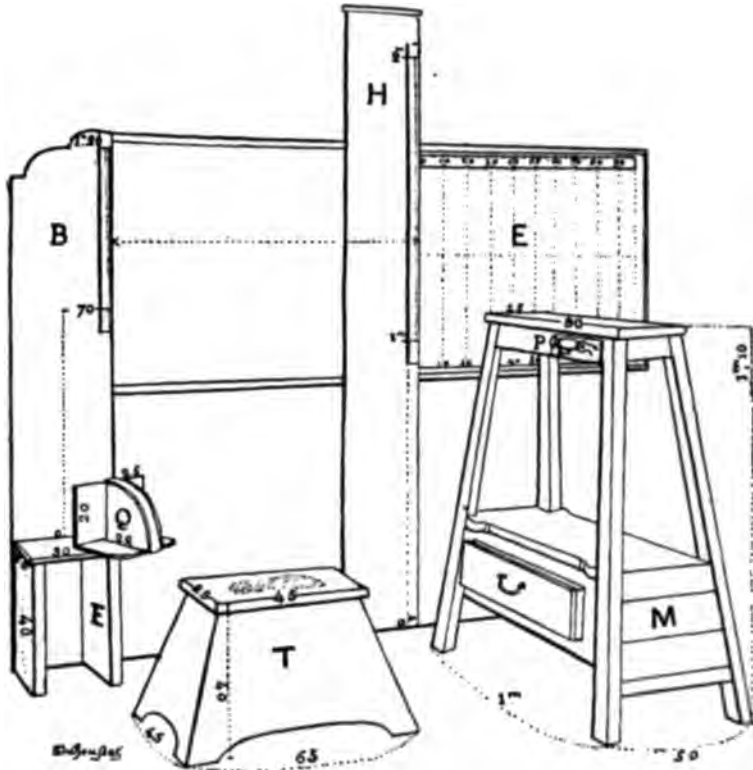
MEASURING THE LENGTH OF HEAD (a)



FIRST STAGE. — The left point of the compass being placed and firmly held at the root of the nose, the operator, keeping his eyes fixed on the scale, brings the right point down over the back and middle of the head, and ascertains within a millimetre the probable maximum length (*Instr.*, p. 107).

MEASURING FURNITURE

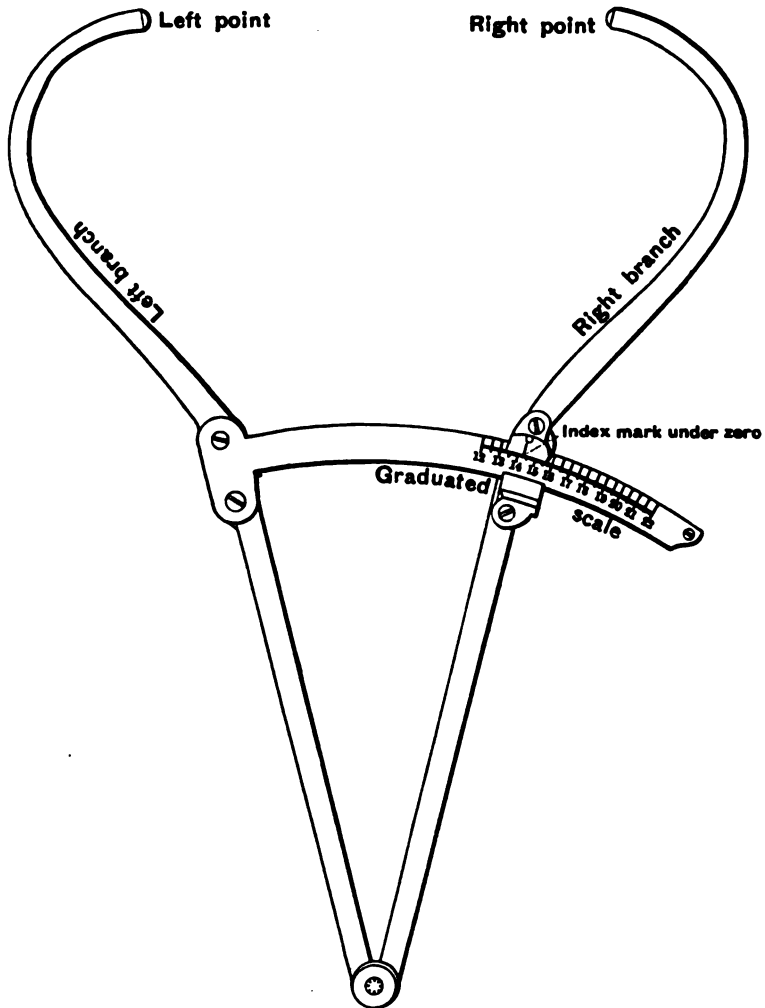
showing arrangement of mural graduations



- H.** — Vertical rule one metre long for measuring the height (*Instr.*, p. 100).
- E.** — Graduations on paper or oilcloth for measuring the reach (*Instr.*, p. 103).
- B.** — Rule half a metre long for measuring the trunk or height of a man seated (*Instr.*, p. 105).
- Q.** — Portable square with double projection, used in measuring the height and the trunk.
- E.** — Stool used in measuring the trunk.
- T.** — Movable foot-stool to facilitate the measuring of the foot, of the cranial diameters and of the ear.
- M.** — Trestle specially intended for the measuring of the forearm, and affording a point of support (P) to the subject during the measuring of the foot (*Instr.*, p. 118).

CALIPER COMPASS

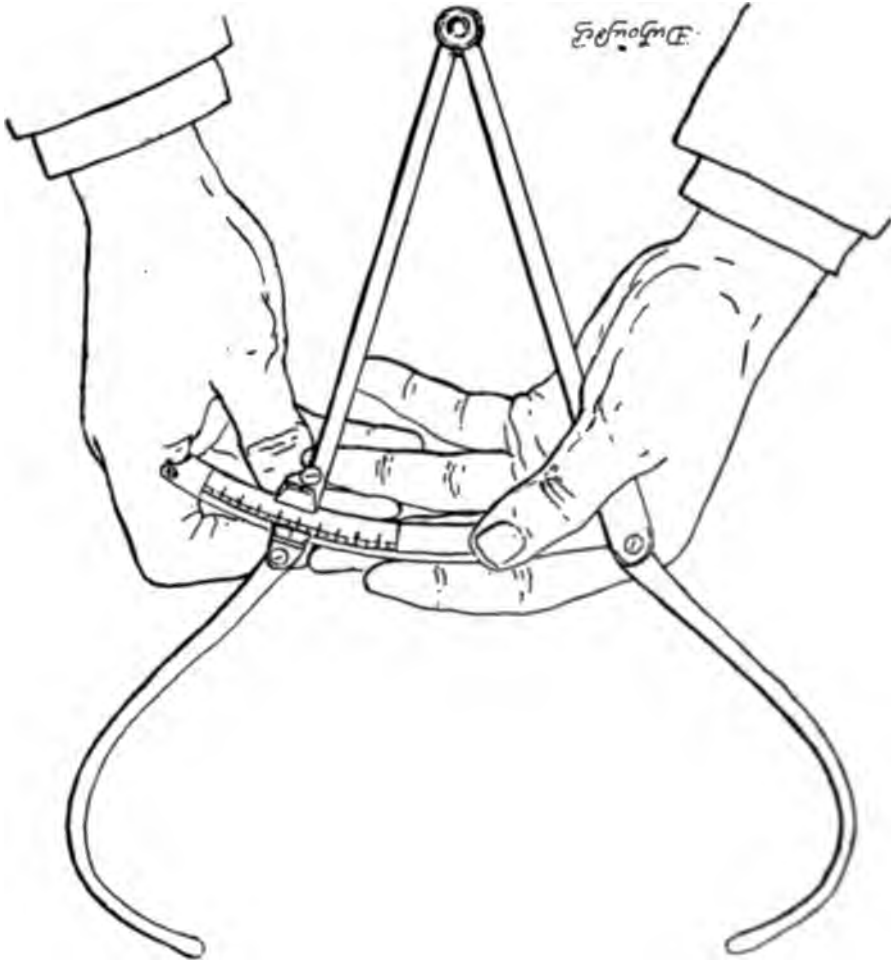
for measuring the length and width of the head



To read the indications of the instrument turn to the point directly opposite the zero mark drawn on the upper edge of the bolt. For example, the opening of the branches in the above drawing is about 1.4 cm 3 mm.

MEASURING THE LENGTH OF HEAD (d)

Point of view from which this figure should be studied by a *MEASURER* desiring to reproduce its arrangement as regards the *fingering*.



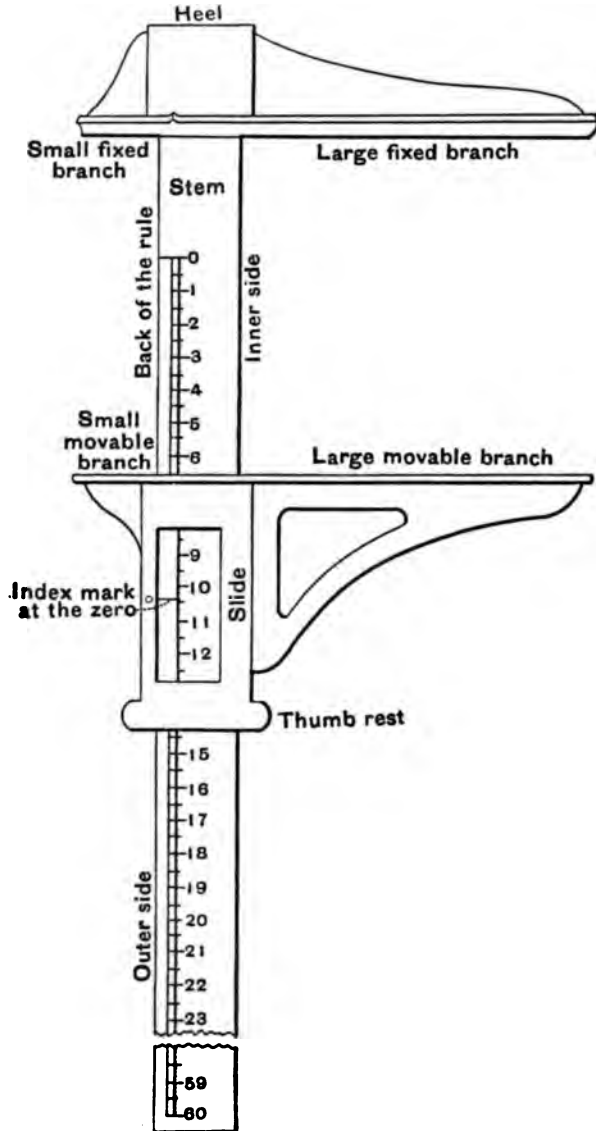
SECOND STAGE.—*Special view*, taken from above, for the study of the *fingering* to be employed for immobilizing the branches of the compass at the apparent length.

Point of view of an *observer*.

THIRD AND LAST STAGE, CALLED THE VERIFICATION.—The operator, having fixed the compass, replaces it on the head of the subject and verifies the accuracy of the figure found the first time by assuring himself that the friction of the right branch against the back of the head is satisfactory (For the general position turn to plate 8).

LARGE CALIPER RULE

for measuring the foot, the middle and little fingers and the forearm



To read the indications of the instrument turn to the point directly opposite the zero mark traced on the middle of the left edge of the opening in the slide or thumb rest. For example, the opening of the branches in the above drawing is about 10cm 4mm.

MEASURING THE WIDTH OF HEAD (b)

Point of view from which this figure should be studied by a measurer desiring to reproduce its arrangement, especially as regards the fingerings and the position of the instrument.



FIRST STAGE.—Special view, taken from above, of the position represented on the opposite page.

Point of view of an observer. — Notice the regulation position, almost horizontal, of the arms of the compass.

MEASURING THE LENGTH OF HEAD (a)



FIRST STAGE. — The left point of the compass being placed and firmly held at the root of the nose, the operator, keeping his eyes fixed on the scale, brings the right point down over the back and middle of the head, and ascertains within a millimetre the probable maximum length (*Instr.*, p. 107).

MEASURING THE TRUNK

(Height of a man seated)



Make the subject sit squarely on the stool, see that he holds himself erect, and place and manipulate the portable square in the same manner as in measuring the height (*Instr.*, p. 105).

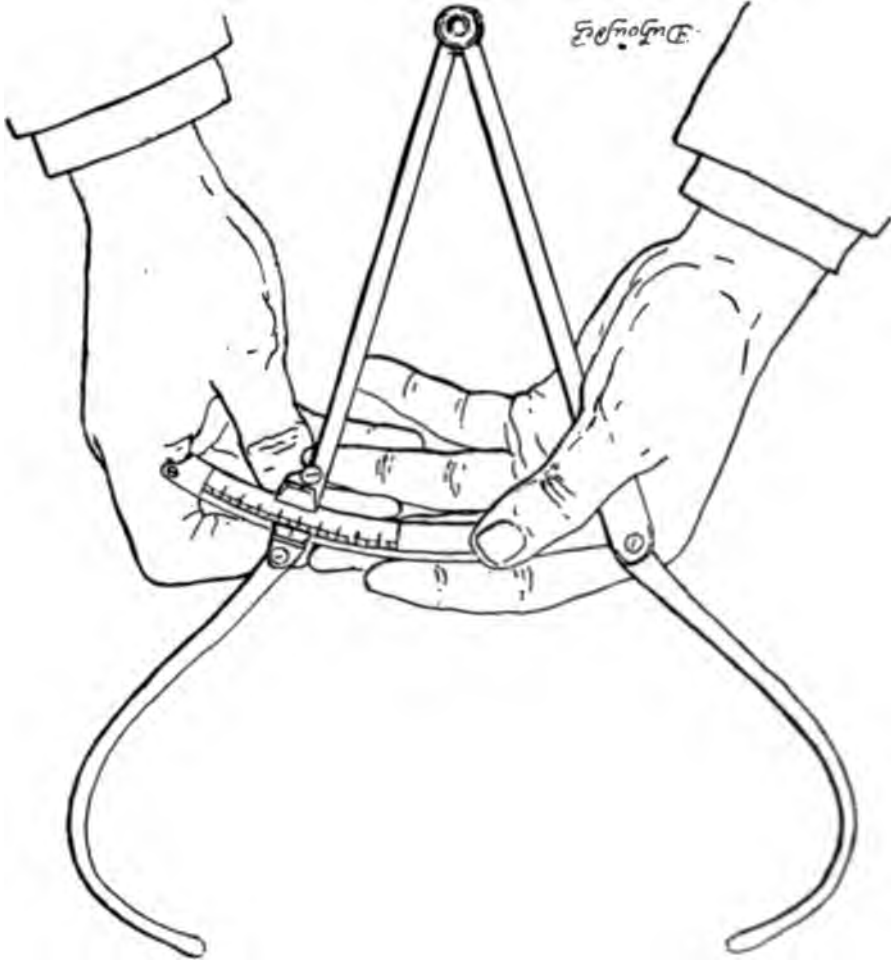
MEASURING THE LENGTH OF HEAD (c)



SECOND STAGE. — The operator removes the compass from the head of his subject and fixes its opening at the apparent length by means of the thumb screw (*Instr.*, p. 108).

MEASURING THE LENGTH OF HEAD (d)

Point of view from which this figure should be studied by a measurer desiring to reproduce his arrangement as regards the fingering.



SECOND STAGE.—*Special view*, taken from above, for the study of the fingering to be employed for immobilizing the branches of the compass at the apparent length.

Point of view of an observer.

THIRD AND LAST STAGE, CALLED THE VERIFICATION.—The operator, having fixed the compass, replaces it on the head of the subject and verifies the accuracy of the figure found the first time by assuring himself that the friction of the right branch against the back of the head is satisfactory (For the general position turn to plate 8).

MEASURING THE LENGTH OF HEAD (c)



SECOND STAGE. — The operator removes the compass from the head of his subject and fixes its opening at the apparent length by means of the thumb screw (*Instr.*, p. 108).

MEASURING THE WIDTH OF HEAD (b)

Point of view from which this figure should be studied by a measurer desiring to reproduce its arrangement, especially as regards the angling and the position of the instrument.



FIRST STAGE.—Special view, taken from above, of the position represented on the opposite page.

Point of view of an observer. — Notice the regulation position, almost horizontal, of the arms of the compass.

MEASURING THE WIDTH OF HEAD (a)



FIRST STAGE.—General view. The operator, with his eyes fixed on the scale, ascertains to within a millimeter the probable maximum width (*Instr.*, p. 110).

MEASURING THE WIDTH OF HEAD (b)

Point of view from which this figure should be studied by a measurer desiring to reproduce its arrangement, especially as regards the fingering and the position of the instrument.



FIRST STAGE.—*Special view*, taken from above, of the position represented on the opposite page.

Point of view of an *observer*. — Notice the regulation position, almost horizontal, of the arms of the compass.

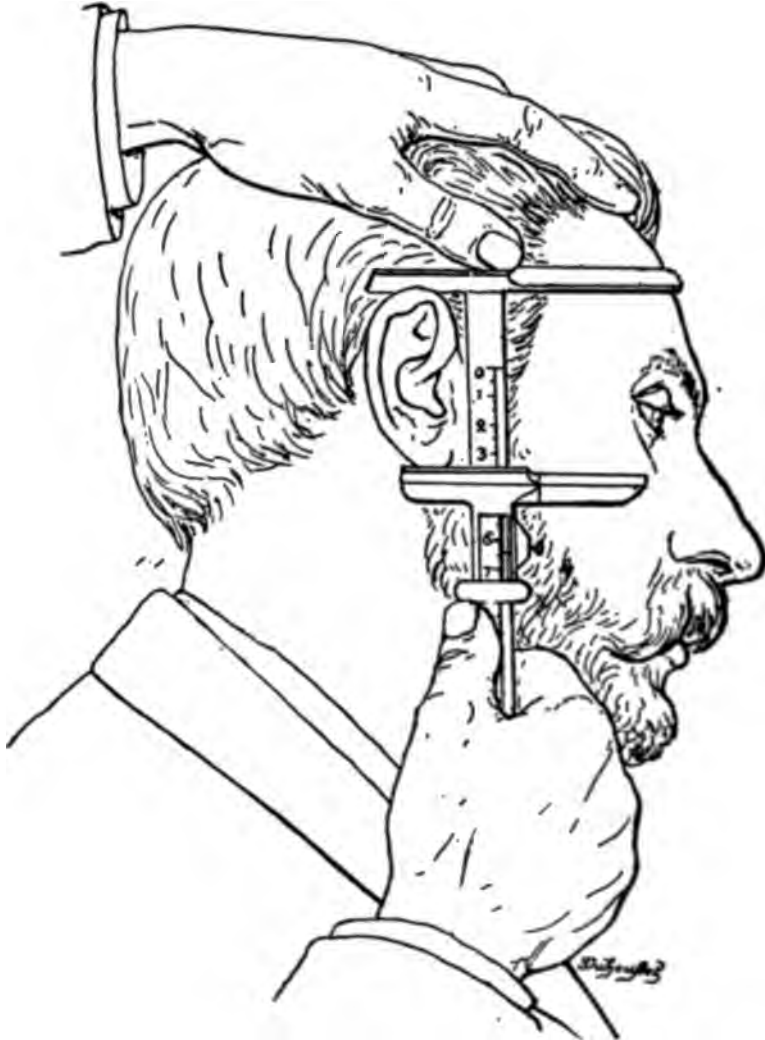
MEASURING THE WIDTH OF HEAD (c)



SECOND STAGE.—The operation withdraws the compass from above the head or his subject and fixes its opening, by means of the thumb screw, at the suspected width (*Instr.*, p. 111).

(For the position of the fingers seen from above, turn to plate 11).

MEASURING THE LENGTH OF RIGHT EAR (b)



Special view for the study of the position of the fingers and of the instrument.

MEASURING THE LENGTH OF RIGHT EAR (a)



The operator makes the flat *fixed* branch of the instrument graze the *superior* border of the ear, and holds it still by pressing his left thumb firmly on the upper end of the stem, the other fingers of the hand resting on the top of the skull (*Inst.*, p. 113).

The stem of the rule being in a position parallel with the axis of the ear, the operator gently pushes up the *movable* branch until it just touches the *inferior* extremity of the lobe, and assures himself, before reading the figure indicated, that the pavilion of the ear is in no wise depressed by either branch.

THE EYEBROWS (b)



1. Eyebrows short.



2. Eyebrows long.



7. Eyebrows united.



3. Eyebrows linear



4. Eyebrows broad.



5. Eyebrows with maximum im-
plantation at tail.



5. Eyebrows sparse (*clairsemés*).



6. Eyebrows thick (*denses*).



9. Eyebrows bushy.

THE MOUTH



1. Mouth small.



2. Mouth large.



7. Scar of chapping (genures)
on lower lip.



3. Mouth with corners
elevated.



4. Mouth with corners
depressed.



8. Mouth heart-shaped
(*in com.*)



5. Mouth pinched.



6. Mouth gaping (*in*)



9. Upper incisors uncovered.

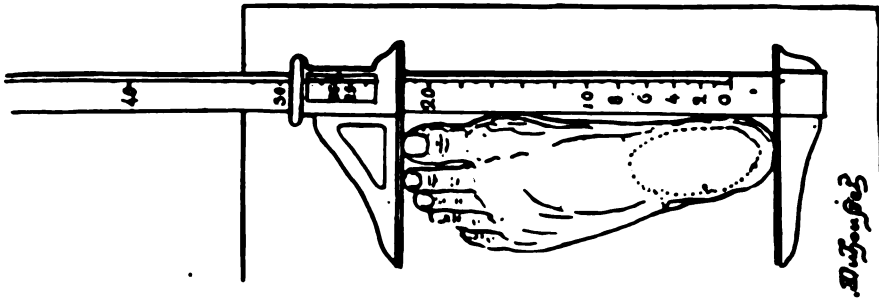
MEASURING THE LENGTH OF LEFT FOOT (a)



The operator, after having had his subject placed in the position represented above, presses the fixed branch of the instrument firmly against the back of the heel, taking care to have the graduated stem touch, if possible, the internal face of the heel and of the toe joint. Then he gradually brings down the movable branch until it is in contact with the great toe, assuring himself by shaking the instrument a little that the movable branch has neither pushed back nor compressed the extremity of the great toe, and finally replaces the instrument, if necessary, and tightens it very slightly before reading the figure indicated (*Instr.*, p. 118).

MEASURING THE LENGTH OF LEFT FOOT (b)

Point of view from which this figure should be studied by a measurer who wishes to reproduce the position.



Special view, taken from above, for the study of the position of the instrument in relation to the foot to be measured.

Point of view of an observer.

MEASURING THE LEFT MIDDLE FINGER (a)



FIRST STAGE.—The operator, facing his subject, places the finger to be measured on the back of the rule (*Instr.*, p. 122).

MEASURING THE LEFT MIDDLE FINGER (b)



SECOND AND THIRD STAGES.—Making a quarter-turn (at the same time lifting his left arm considerably) the operator brings the finger to be measured into a position at right angles with the back of the hand.

The hand of the subject being in the correct position, the operator moves the slide down and reads the figure indicated (*Instr.*, p. 123).

NOTE.—Properly, the branches of the rule should be nearly horizontal. In the above drawing they have been intentionally placed obliquely from before to behind in order to permit the position of the fingers to be seen *from below*. For the true inclination of the instrument turn to the following plate, No. 24.

MEASURING THE LEFT MIDDLE FINGER (e)

Point of view from which this figure should be studied by a *MEASURER* desiring to reproduce its arrangement, specially as regards the direction of the instrument and incidentally the fingering (Study plates 24 and 25 together).

*



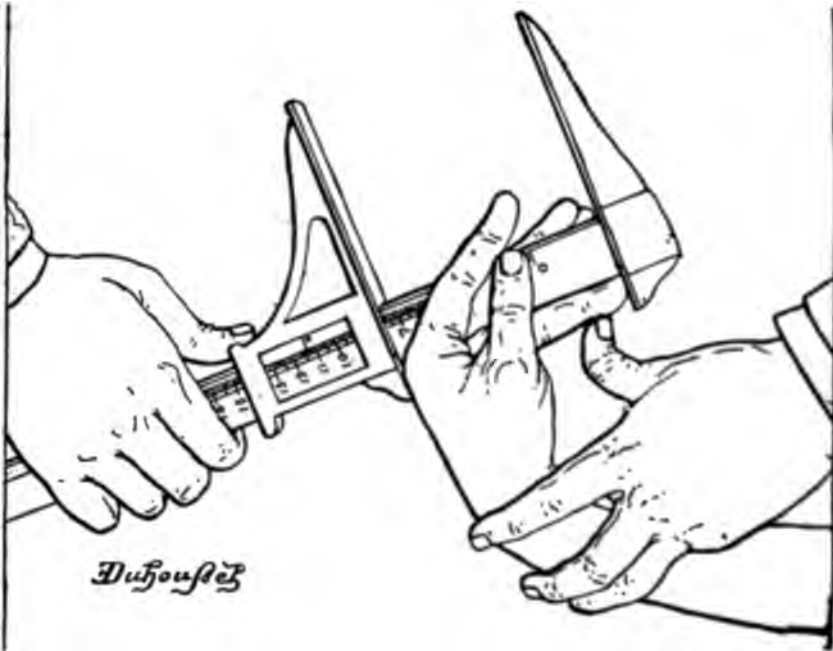
THIRD AND LAST STAGE.—Rigorously exact view taken from above at an angle of 45° to show clearly: 1st, the almost horizontal position of the movable branches of the rule, and 2nd, the direction of the graduated stem, which points obliquely towards the body of the operator (*Instr.*, p. 124, § 30).

*

Point of view of an *observer* who, in the presence of a measurer operating under his eyes, desires to verify the correctness of the positions taken.

MEASURING THE LEFT MIDDLE FINGER (d)

Point of view from which this figure should be studied by a measurer desiring to reproduce the positions of the fingers.



THIRD AND LAST STAGE.—Special views taken from above at an angle of 90° , to show the placing of the measurer's fingers and the position of the middle finger to be measured.

Point of view of an observer.

SYNOPTICAL TABLE OF THE FORMS OF THE NOSE



1. Nose with profile concave elevated.



4. Nose with profile rectilinear elevated.



7. Nose with profile convex elevated.



2. Nose with profile concave horizontal.



5. Nose with profile rectilinear near horizontal.



8. Nose with profile convex horizontal.



3. Nose with profile concave depressed.



6. Nose with profile rectilinear depressed.



9. Nose with profile convex depressed.

**NOSES PRESENTING SOME ANOMALIES OF FORM OR
SOME DIFFICULTIES OF CLASSIFICATION**



1. Nose [con]cave very elevated and so short it might almost be called convex.



2. Nose is slightly convex that it might almost be called rectilinear.



3. Nose extraordinarily humped.



4. Nose [con]cave-very-sinuous horizontal.



5. Nose rectilinear-sinuous horizontal.



6. Nose slightly humped-sinuous horizontal.



7. Nose slightly concave-sinuous with base much depressed.



8. Nose rectilinear-sinuous with base depressed.



9. Nose slightly convex-very-sinuous with base depressed.

THE DIMENSIONS OF THE NOSE SEEN FROM THE FRONT

**Synoptical table of combinations of the three degrees of height
with the three degrees of width**



1. Nose of little height and little width.



2. Nose of little height and medium width.



3. Nose of little height and great width.



4. Nose of medium height and little width.



5. Nose of medium height and medium width.



6. Nose of medium height and great width.



7. Nose of great height and little width.



8. Nose of great height and medium width.



9. Nose of great height and great width.

THE LIPS



1 Naso-labial height little and prominence of upper lip.



2 Naso-labial height great and prominence of lower lip.



7 Median furrow of upper lip accentuated.



3 Lips with thin border.



4 Lips with wide border.



8 Upper lip protruding to the side.



5 Lips thin (*minces*).



6 Lips thick (*épaisses*).



9 Lower lip pendant.

PECULIARITIES OF THE EAR (a)

1st, of the border (figs. 1-12); and, of the lobe, (figs. 13-16).



1 Darwinian nodosity



2 Darwinian enlargement.



3 Darwinian projection.



4 Darwinian tubercle.



5. Notched border.



6. Supero-posterior contour square.



7. Supero-posterior contour acute.



8. Antero-posterior contour acute.



9. Superior contour biflected.



10. Border ruffled and superior contour acute.



11 and 12. Enlargements of the same ear from a profile and a full-face photograph.



13. Lobe dimpled.



14. Lobe with inclination oblique-internal.

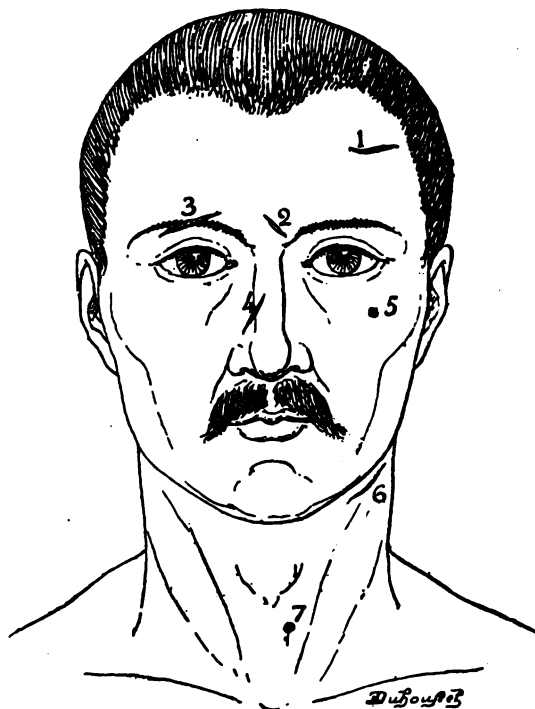


15. Lobe with inclination external.



16. Lobe with anterior rotation.

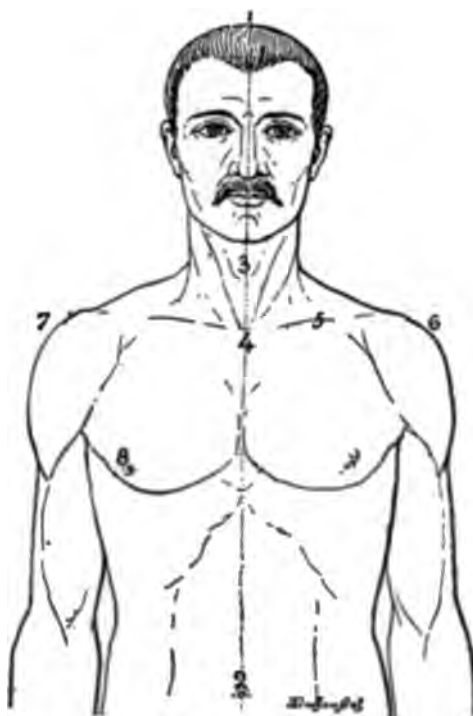
FACE SEEN FROM THE FRONT (b)



Description and localisation of marks represented

- No. 1.—Cic. rectilinear of 2 horizontal at 3 above eyebrow left half external.
- No. 2.—Cic. rectilinear of 1/0.2 oblique to left at 1 above root of nose.
- No. 3.—Cic. rectilinear of 2 horizontal (slightly oblique external) middle eyebrow right.
- No. 4.—Cic. rectilinear of 1.7 oblique external right side of nose at 2 under root.
- No. 5.—Nævus at 2 under external angle left eye.
- No. 6.—Scrofula with cavity superior of 4 oblique anterior at 6 above and to left larynx under maxillary.
- No. 7.—Nævus hairy at 1.5 under larynx.

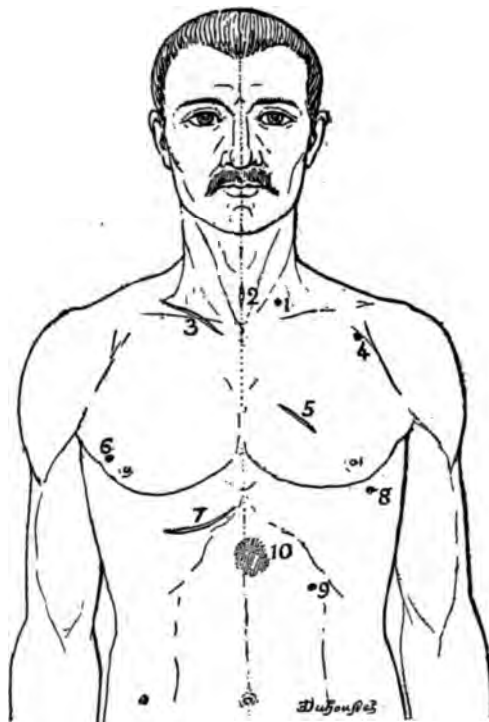
TRUNK SEEN FROM THE FRONT (a)



Designation of parts serving as datum points, drawn as far as the waist

1, median line (represented by a dotted line drawn from the top of the head to the umbilicus); 2, umbilicus; 3, larynx; 4, sternal fork; 5, left clavicle; 6, left shoulder; 7, right shoulder; 8, right test; 9, left test.

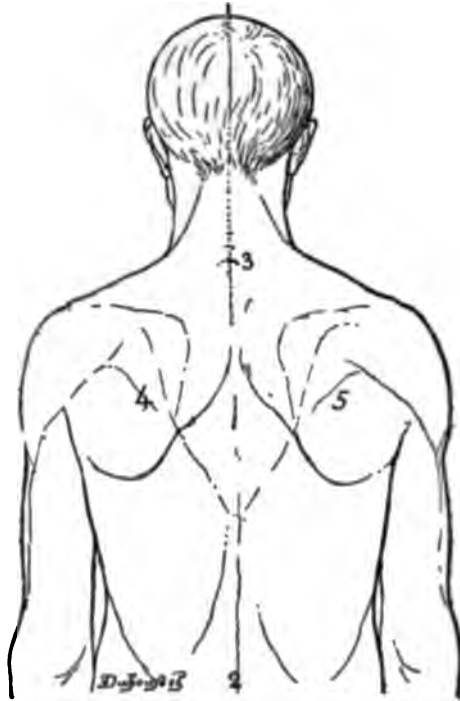
TRUNK SEEN FROM THE FRONT (b)



Description and localisation of marks represented

- No. 1.—Nævus at 6 under larynx and at 3 to left median.
No. 2.—Cic. of operation for croup of 2.5 vertical at 3 under larynx.
No. 3.—Deep cic. rectilinear of 6/1.5 slightly oblique internal at 4 to right of fork on clavicle.
No. 4.—Nævus at 9 to left fork on shoulder.
No. 5.—Cic. rectilinear of 3.5 oblique external at 7 under fork and at 3 to left median.
No. 6.—Nævus at 2 above and behind teat right.
No. 7.—Very deep cic. curved with cavity superior of 8/0.2 at 15 under fork and 2 to right median.
No. 8.—Nævus at 3 under teat left.
No. 9.—Cicatrical point at 10 under teat and at 6 to left median.
No. 10.—Cic. round of burn of 3 at 10 above umbilicus, on median, three quarters to left.

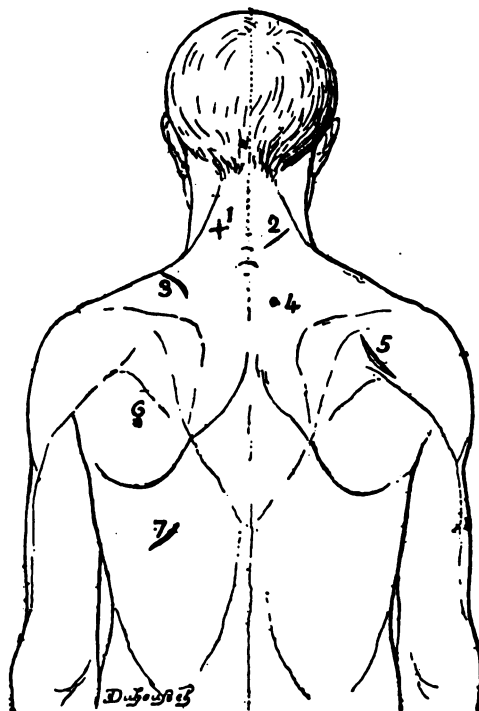
TRUNK SEEN FROM BEHIND (a)



Designation of parts serving as datum points down as far as the waist

1, median line represented by spinal column; 2, position of the line of the waist;
3, prominent or 7th vertebra; 4, left omoplate; 5, right omoplate.

TRUNK SEEN FROM BEHIND (b)



Description and localization of marks represented

- No. 1.—Cic. of furuncle cross-shaped at 2.5 to left column and at 3 above 7th vertebra.
- No. 2.—Cic. rect. of 3 oblique internal at 1 above and to right of 7th vertebra.
- No. 3.—Cic. curved with cavity inferior at 7 to left 7th vertebra.
- No. 4.—Nævus at 1 to right column and at 3 under 7th vertebra.
- No. 5.—Deep cic. slightly curved with cavity superior of 5 oblique external at 12 under 7th vertebra and at 9 to right column.
- No. 6.—Deep nævus at 18 under 7th vertebra and at 10 to left column.
- No. 7.—Cic. rectilinear of 3/0, 2 oblique external at 24 under 7th vertebra and at 6 to left column.

ALPHABETICAL TERMS

PECULIAR MARKS

IN MARKS

AUTHORIZED ABBREVIATIONS

significance of each

Above

(*of the reader*)

Amp	Amperes
[And]	ANDING FROM
Anky	Di
Angl	
Anno	V Chest and front of
Antel	ision V the neck
Appa	t or (d
metre	..... frc
[A]	metres clw
Auric	poitrine) —
Base	mensio str
Befod	limes the median and
Behis	write of the teats) ..
Below	rd ca md
Betw	nitted; us or navel... mhl
metre	i
Bice	rded
Boil,	..... cl
Brea	ste ompl
Brok	ating
Cavir	and No. VI
Cent	signati
Chas	cs (fesse) —
Chedl	(pachuisse) —
Chium —
Cicage	or bollet) —
Cicabt —
Circp	(fo' chevillie) —
Clawt	(com cou-de-pied) ... —
Colucially —
Comse	(P' tail) —
Cubbral —
Curs	
Dev	
Digi	
Dim	
Dim	
Diat	
Ear	
Elbe	or
Easp	
Extt	
Eyked	dd signaletic cards.

axillary or jaw-bone
merous or numbers
of
betril
ocially (or notably)
evus or mole
iricular or little finger
oplate or shoulder-
blade
al
hall (or petty)
llex or thumb
rist
tween pollex and in-
dex
veral
lm
neck-bone
terior or rear
elid
rallel
otuberance
atrical point
me
uare
ectilinear
oot
ight
reckle
nuous
rofula
venth vertebra
yebrow or supercil-
ium
ituated
ternum
uperior and above
atooing
ragus
riangle
raversed or channeled
eat or nipple
ertical
pparently
ariola or small-pox
isage or face
ertical

Special List

of signs of conventional form, already mentioned in part in the Alphabetical List in their respective places

1st, Simple Signs

	Superior and above
	Inferior and under
	Anterior
	Posterior
	External
	Internal
	Right
	Left
	Seventh vertebra

[For English use the following familiar and already international signs may be conveniently added

	at (Fr. d)
	and (Fr. et)
	per (Fr. d)
used in the rare cases of a mark with several equal sides, between the figure of dimension and the word side, thus: cic. of trigl. of 3 side]	

2nd, Composite Signs

	Curved, with superior concavity
	Curved, with inferior concavity
	Curved, with anterior concavity
	Curved, with posterior concavity
	Curved, with external concavity
	Curved, with internal concavity

*In

Plate 77.

SPECIMEN OF ABRIDGED WRITING.

Description and Localization of the Peculiar Marks mentioned in Plates 63-76.

PLATE 63.	PLATE 70.
<p>I. Left upper limb: Anterior nr @ 11 - cb f l. lat. Pour R. VIE of 2 R @ 5 - cb f a. tat. 1 heart of 2 shaded anachronous MARIE @ 2 - preceding inscription cic c of 2 b e @ 3 - pg f a. II. Right upper limb: Anterior. cic (of bleeding?) r of 18 b i @ 3 cb d a. fur @ 12 - d e - a. tat. 1 anchor of 2 @ 6 - cb d a. cic r of 3 h @ 4 - pg d a 1/2 i</p>	<p>fur @ 1.5 - pt e, arc d. ac trngl. of 7 @ side @ 3 avt trg d. deep nr @ 3 - & avt lob d. cic r of 3 b a @ 3 - lob d - ma</p>
<p>PLATE 64.</p>	<p>PLATE 72.</p>
<p>I. Left upper limb: Posterior. cic r of 2 b i @ 4 - cb f a - e cic or of 2 w @ 5 - cb f p (apparently tat. effaced). ac r of 6 b i @ 9 - pg f p. II. Right upper limb: Posterior cic of blister of 2 @ 9 - cb d a - e. cic c of 6 b e @ 5 - cb d p cic r of 3 b e @ 13 - cb & @ 10 - pg d p. tat. 1 bracelet with locket pg d p.</p>	<p>cic r of 2 h @ 3 - arc f l. cic r of 2 b to f @ 1 - root nose cic r of 2 h (lgt b e) ml arc d. cic r of 17 b e side d of nose @ 2 - root. nr @ 2 - gl e eye f. scrof of 4 cl b a @ 6 - to f brx - mx. nr hairy @ 1.5 - brx.</p>
<p>PLATE 66.</p>	<p>PLATE 74.</p>
<p>deep cic c of 2 w ml b e f a. ac lgt c of 4 h @ 1 - 1° f a - e. cic r of 2 w end 3° f M f a. cic r of 2 w A - O f a!</p>	<p>nr @ 6 - brx & 3 to f md. ac of operation for croup of 2.5 w @ 3 - brx deep cic tr of 2 1/2 lgt b i @ 4 to d frc on clv. nr @ 9 to f frc on shoulder cic r of 3 b e @ 7 - frc & 3 to f md. nr @ 2 - ori tt d. very deep cic c of 2 @ 13 - frc & 2 to d md. nr @ 3 - tt f. ft cic @ 18 - tt & @ 6 to f md. cic rd of burn of 3 @ 10 - mll on md 1/2 to f.</p>
<p>PLATE 68.</p>	<p>PLATE 76.</p>
<p>cic c of 2 b e 2° f p f p. ac lgt c of 4 h @ 1 - 1° f a - e. cic r of 2 b e 2° f 3 f p. mark M f striated cic r of 3 w 1° - d f p. cic c of 1.5 b i d 1° f p. tat. 1 heart R - J f p.</p>	<p>cic of fur crossshaped @ 2.5 to f cl @ 3 - 7°. cic r of 3 b i @ 1 - & to d 7° cic c @ 7 to f 7°. nr @ 1 to d cl d b @ 3 - 7°. deep cic lgt c of 3 b e @ 2 - 7° & @ 9 to d cl. large nr @ 18 - 7° & @ 10 to f cl. cic r of 2 b e @ 24 - 7° & @ 6 to f cl.</p>

SIGNALETIC CARD

of the size to be classified anthropometrically, with manuscript entries
(Recto)

142mm

I.—Anthropometrical Observations.

height, 1m <u>62.1</u>	curvature <u>3</u>	reach, 1m <u>51(1)</u>	trunk, 0m <u>25.9(2)</u>	Head length <u>20.1</u> width <u>13.8</u>	left foot <u>25.8 > 3</u> left middle f. <u>11.0 (3)</u> left little f. <u>8.5 & 2</u> left forearm <u>45.0</u>	Color of Left Iri class <u>3-4</u> areola <u>dark on</u> periph. <u>in r. f.</u> pecul. <u>dark by f. m.</u>	age <u>50 years</u> born on <u>June 12, 18 92</u> at <u>Paris</u> in <u>dept of Seine</u> app. age <u>55 years</u>

II.—Descriptive Information.

Forehead inclin. <u>f</u> Height <u>...</u> Width <u>...</u> pecul. <u>base</u>	Root (depth) <u>...</u> ridge <u>...</u> base <u>(rel)</u> Height Projec. <u>...</u> Width <u>...</u> pecul. <u>tip dr. to id</u>	Right Ear bord. <u>O. Nas S.</u> — P. <u>q. o. ad</u> lobe <u>c. side a. m. ear D. of</u> anti-trg. <u>i. — p. — r. — D.</u> fold <u>i. — ; f. — ; c. post</u> pecul. <u>dark skin</u>	beard <u>absent</u> hair <u>dark on top</u> Should. <u>bl. i. d.</u> charac. traits <u>very broad</u> <u>eyebids short, mouth large</u> <u>lips thin, chin dimpled</u>	Pigment of Sanguin. <u>f</u> Girth <u>...</u>

III.—Notes on the measurements.— Peculiar marks and scars.

<p>NOTES (1) arm of amput @ 4cm from cub. @ ch</p> <p>(2) amput of projecting (humpback)</p> <p>(3) 3rd phal. of left medius shortened (whitlow) & nail curved back</p> <p>I. tattoo 1 pansy biceps left [side] external [face]. Cicatrix rectilinear of 1cm horizontal middle cubital anterior (of bleeding). tattoo 1 tomb — TO MY MOTHER @ 4cm under cub. left ant.</p> <p>(4) Cicatrix rectilinear of 1cm horizontal middle cubital anterior (of bleeding). Tattooing 1 pansy biceps left [side] external [face]. Cicatrix rectilinear of 1cm horizontal middle cubital anterior (of bleeding). Tattooing 1 tomb under TO MY MOTHER at 4cm under cubital left anterior.</p>	<p>III. (4) eye of amput.</p> <p>(5) parietal baldness (wears wig). Cicatrix rectilinear of 2cm horizontal middle eyebrow, right. Nævus at 3cm under and behind left corner mouth.</p> <p>IV. Wart at 4cm under and before right test and 6cm from median. Cicatrix rectilinear of 4cm oblique to right at 8cm above umbilicus on median. Deep furuncle at 5cm under to left fork and 3cm from median.</p> <p>V. deep cic. stony of 4/3 @ 2cm amput id.</p> <p>VI. 5° toe of each foot turned over 9° amput 4° toe id. See on back</p>
---	--

Signalment { taken on Sept. 12, 1892 by { Names and Initials } Bernard L. C., officer at Great Cod. No. 14
investigated Sept. 15, 1892 by { Deland, C. of central anthropometrical service, Paris.

Translation written out in full of the description of peculiar marks in abridged writing on the specimen card above.

NOTES.—(1) right arm amputated at 4cm above wrist ankylosed at cubital.
(2) left omoplate projecting (humpback).
(3) 3rd phalanx of left medius shortened (whitlow) and nail curved back.

I. Tattooing 1 pansy biceps left [side] external [face].
Cicatrix rectilinear of 1cm horizontal middle cubital anterior (of bleeding).
Tattooing 1 tomb under TO MY MOTHER at 4cm under cubital left anterior.

III. (4) Left eye amputated (5) parietal baldness (wears wig).
Cicatrix rectilinear of 2cm horizontal middle eyebrow, right. Nævus at 3cm under and behind left corner mouth.

IV. Wart at 4cm under and before right test and 6cm from median.
Cicatrix rectilinear of 4cm oblique to right at 8cm above umbilicus on median.
Deep furuncle at 5cm under to left fork and 3cm from median.

(over)

(over)

SIGNALETIC CARD

of the size to be classified anthropometrically, with manuscript entries
(Verso)

No. 34,546 | calling himself
 Names (family and given): Nordette Gustave, Emile, Francois
 Nicknames and aliases: called la Bombé (1)
 Born on June 12th 1892, at Paris ~~arr~~ Haut 20 Department Seine
 Son of Nicolas and of Marie Ladus
 Profession: Organ-grinder Last residence: City, 12 Rue de la St.
 Papers of identity: Prison discharge ticket
 Relations: _____
 Military services: Discharged from army
 Previous convictions, number of: 2 consisting
 Cause and place of last previous imprisonment: Begging at Lyons
 Present imprisonment, specification of offense: Begging and threats

Known Arrests.

Sundry Information.

Particulars. Markes (continued)
Wine-mark on of 6/4 on buttock of
is on of 3/1, 2 at 5 base of external
ear
 (1) Was charged by the prisoner
Jarreau, Léon, 30 years, born at Val-
ence, with having been imprisoned
about 3 years ago at St-Jean de Bellevue
Lyons, which must itself have been a
false name. - A note from the police judge
asked to have this declaration verified,
and sent to have a new anthropometric
investigation made.

(Notice to be classified anthropometrically, form of 1893.)

(continued from last page)

Cicatrix curved with cavity inferior of 1.5 oblique internal 2nd phalanx annular left [side] anterior [face]
 II Tattooing 1 sailor leaning on an anchor at 4cm under cubital right anterior
 2 nevuses, infant by 4cm vertically at 4cm under cubital right internal
 Cicatrix oval of 4 3 horizontal hiding an inscription at 3 under cubital right posterior

Nevus hairy at 2 under middle clavicle, left.
 V Deep cicatrix starry of 4, 3 at 2cm under omoplate, right.
 VI 5th toe of each foot turned over 4th.
 Amputation of 4th toe, right.
 (on the verso)
 Wine-mark oval of 6, 4 middle left buttock.
 Cicatrix oval of 3, 1 at 5 above knee, right, external face.

SIGNALNETIC CARD FOR FILING ANTHROPOMETRICALLY

Special form used at Paris when subject is photographed

(Recto, with judicial photograph and finger-prints.)

height, 1 ^m	Head	length	left foot	Color of Left Iris	class	age	
curvature		width	left medius		areola	born on	18
reach, 1 ^m		bi-zyg.	left auricular		periph.	in	at .....	app. age .....
trunk, 0 ^m		right ear	left forearm		pecul.		

(Photographic reduction 1/7.)



Hair	color	Beard	color
	pecul.		pecul.
Com-plexion	Pigment.	Sanguin.	
	pecul. ....	.....
Taken at Paris, on			
by			
verified on			
by			

[For mechanical reasons the headings of the French card are necessarily reproduced in the following fac-similes of finger-prints taken by Dr. Bertillon in Paris.]



Impression of right: Thumb Index Medius and Annular

Remarks

1. The other side (*verso*) of the card represented above is exactly like the one on plate 79, as far as the heading "Present imprisonment, specification of offense," inclusive; and the rest of it is a reproduction of the portion of the card on plate 78 provided for the notes and statement of peculiar marks, beginning "III.—Notes on the measurements," etc., and omitting the headings at the bottom for dates of taking and verifying the signalment.

2. In all the cards now in use by the French government the bi-zygomatic diameter (see p. 259) is substituted for the width of the right ear, as above.

3. In most places except Paris the cards used for the anthropometrical and alphabetical files (see p. 67) differ only in size, and both have the form represented on plates 78 and 79. In Paris, however, the cards for the anthropometrical file are now of one of the forms given above and in plate 79 b; while those filed alphabetically are exactly like the form on plates 78 and 79, except that the bi-zygomatic diameter is substituted for the width of ear, and that two lines are left for the notes above and outside of the double columns for the statement of peculiar marks, instead of one line at the beginning of the first column.

[Plate 79 b]

SIGNALETIC CARD FOR FILING ANTHROPOMETRICALLY

Special form used at Paris when no photograph is taken

(Recto, with space for finger-prints.)

I.—Anthropometrical Observations.

height, 1 ^m _____	Head	length _____	left foot _____	Color of Left Iris	class _____	age _____
curvature _____		width _____	left medius _____		areola _____	born on _____ 18 _____
reach, 1 ^m _____		bi-syg. _____	left auricular _____		periphery _____	at _____
trunk, 0 ^m _____		right ear _____	left forearm _____		pecul. _____	in _____	app. age _____

II.—Descriptive Information.

Forehead	Arches _____	Nose	Root (depth) _____	Mouth	Labial height _____	Chin	Dimen. _____	Contour of Profile	fronto-nasal _____
	inclin. _____		ridge base _____		prom. _____		pecul. _____		naso-buccal _____
	Height _____		Height Proj. Width _____		border _____		inclin. _____		Cranial height _____
	Width _____				thickness _____		pecul. _____		malform. _____
pecul. _____	pecul. _____	pecul. _____	pecul. _____						

Right Ear	bord. Orig. _____	Sap. _____	Post. _____	opening _____	pecul. _____
	lob. contour _____	adher. _____	model _____	Dimen. _____	pecul. _____
	anti-trg. inclin. _____	profile _____	reversion _____	Dimen. _____	pecul. _____
	fold. infer. _____	super. _____	form _____	separ. _____	Concha: Height _____ Width _____	pecul. _____

Contour of face _____ Degree of fleshiness _____

Eyebrows	position _____	Eyeballs	opening _____	Interocular	Bulld	Neck, Length _____ Width _____			
	direction _____		model upper _____			Wrinkles	Shoulders, Width _____ inch.		
	form _____		pecul. _____				ocular _____	Girth _____	
	dimen. _____		projection _____					buccal _____	Bearing, speech, dress, etc. _____
	pecul. _____		pecul. _____						pecul. _____
color _____	orbits _____	expression _____							

Hairy system and Complexion.

Hair	color _____	Beard	color _____
	nature _____		nature _____
	insertion _____		implant. _____
	abundance _____		pecul. _____

Complexion	Pigment. _____	Sanguin. _____
	pecul. _____	

Taken at Paris, on _____ 188 _____

by _____

verified on _____ by _____

[Space for finger-prints.]

Remarks.

1. The verso or reverse of this card is exactly like that of the form with photograph, represented in plate 79a.

2. *Medius*=middle finger; *auricular*=little finger; *index*=first finger; *annular*=third finger.

Fronto-nasal=connected with the forehead and nose; *naso-buccal*=connected with the nose and mouth; *frontal*=connected with the forehead; *ocular*=connected with the eyes; *buccal*=connected with the mouth.

Areola and periphery, see p. 134; for the significance of the headings relating to the ear, see p. 177; *innocu-*

lar, see p. 196; *pigmentary and sanguinous* coloration, see p. 150.

3. In all the signaletic cards given the typographical peculiarities of the French originals (of Dr. Bertillon's own design) are as far as possible preserved, especially as regards the capitalization of the headings, which has a conventional significance: those headings beginning with a capital letter are to be answered only by one of the adjectives *small, medium, large* (or *little, medium, great*), while the rest call for special descriptive terms, figures or names.

SIGNALETIC NOTICE FOR VERBAL PORTRAIT

with manuscript entries

This card, of the size to be classified alphabetically (161mm by 142mm), is so arranged that when folded double beneath the photograph it can be readily inserted in an overcoat pocket.

(Recto, with space for judicial photograph.)

Photographic reproduction 1/7—Description by Benoit L. Paris.—Prefecture of Police—7th search-brigade.

Print No. 186,905 made Dec. 10th, 1890, two years ago, the subject then 28 years old appeared to be 32.

(Photograph omitted in this edition. A much more recent one is given in plate 79a, which see.)

Anthropometric Observations

Chromatic Indications.

height, 1m <u>1.74.1</u>	Head { Right Ear { Left Ear {	length <u>18.5</u>	left foot <u>24.1/2.4</u>	Color of Left Iris { areola <u>br. or. m.</u> periphery <u>red p. m.</u> pecul. _____	class <u>3</u>	beard <u>chestnut-red (1)</u>
curvature <u>1</u>		width <u>15.6</u>	left middle f. <u>(10.00)</u>		hair <u>chestnut m. gr.</u>	
reach, 1m <u>5.0.2.2</u>		length <u>6.2</u>	left little f. <u>7.9</u>		Coloration { Pigmentary <u>br.</u> Sanguineous <u>(gr)</u>	
trunk, 1m <u>89.2</u>		width <u>3.8</u>	left forearm <u>(38.8)</u>			

Descriptive Information (analyzed from profile): GENERAL CONTOUR project a little

Forehead { Height <u>one</u> Width <u>one</u> pecul. <u>high base, with nasal bridge</u>	Arches <u>for</u> inclin. <u>(medium)</u>	Root (depth) <u>one</u> ridge <u>dist. in base elevated</u> Height Proj. <u>one</u> Width <u>one</u> pecul. <u>high, directed to right</u>	Right Ear { bord. Orig. <u>Sup. br. Post. br., opening</u> lob. <u>cont. to join adher. model mouth</u> anti-trig. <u>inclin. prof. rever. Dimen.</u> fold <u>infer. super. br. ; form. ; sep.</u> pecul. _____	Lip { Labial ht. <u>br.</u> pecul. <u>thinned (?)</u> Chin { inclin. <u>projecting</u> Height <u>br.</u> pecul. <u>small (?)</u>		
					Dimen. _____	
					Dimen. _____	
					Dimen. _____	

Descriptive Information (analyzed from full face): GENERAL CONTOUR chestnut-red project

Inplan { hair <u>in front</u> beard <u>br. m. ch.</u> Eyebrows { position <u>low</u> volume <u>short</u> pecul. <u>dark</u>	Eyelids { opening <u>little, sl.</u> model upper <u>one</u> Projection of eyeball _____ Interocular _____ pecul. of eye _____	Mouth { Dimension <u>with lips</u> outline <u>long and</u> pecul. <u>to left & middle after</u>	Bald { neck <u>large project</u> Should. <u>W. br. i. all</u> Girth <u>one</u> habiliments <u>starched collar</u> sundry <u>(1) right of hair white, red in front</u>	Attitude _____ bearing _____ voice <u>soft</u>		
					Dimen. _____	
					Dimen. _____	
					Dimen. _____	

SIGNALETIC NOTICE FOR VERBAL PORTRAIT

(Verso)

The two columns (peculiar marks and sociological information) are reproduced here in the same direction that they ought to occupy in relation to the recto of the card.

This arrangement has been adopted with a view to facilitating the folding of the notices double and the final alphabetical classification, under names, of those which may be, for the time being, out of use.

No. 3245 | Calling himself Duward
 Name: Louis, Paul, Antoine
 Given names: Louis, Paul, Antoine
 Nicknames and aliases: Martin, Louis-Bastien, Guly
 Born on: Nov. 15th 1862, at Bourne
 Cause: Quignac - Department Upper Lot-et-Garonne
 Son of: Louis, Louis
 and of: Marica Laland
 Profession: Was a tailor's apprentice, then shop-
 clerk and further
 Last residence: Paris, 340 St Denis St., four-
 teenth 65 Albany St. and 74 Claude Bernard St.
 Papers of Identity: _____
 Relations: His mistress, the prostitute, Mrs. Louis,
 lived last at 70 La Bruyere St., where she
 sometimes returns to see friends.
 Military services: As corporal captured from 21st of
 the Line
 Previous convictions, number of: 3
 Cause and place of former imprisonment: Swindling at Lyons
 Present grounds, specification of offence: Only at St. Denis St.
 the - bank.

Secondary Information.

(1) Frequent 1st class cafe's often frequents
 himself as originally from Spain, where he
 has travelled a great deal and the lan-
 guage of which he knows something about
 (2) His accomplice Gust. Victor, lives at
 25 Avenue St.

Peculiar Marks and Scars.

I. Scarification horizontal of 4 cm at 8
 above wrist, left, anterior.
Slight scarification of 3 cm vertical at
 1/2 above middle, left, anterior.
Three faint tattooed letters
 thumb and index, left, posterior.

II. Wound at 4 cm above articu-
 tion of elbow, right, anterior, fence.
Nail of right thumb deeply striated
Scarification of 2 cm oblique interval 1/4
 point of index, right, posterior

III. Scarification of forearm at 1 cm below
 left wrist on mass. latid. fossa.
Wound at 6 cm before right thigh
 at 4 cm under latid. interval angle of right
Wound at 2 cm above middle of left thigh

IV. Wound, hairy, at 10 cm under fork
 and at 6 to left median.

V. Forearm at 9 cm under and to
 right 2nd vertebra.

VI. Thumb very long for the height, which is
 relatively small (1m-54). Nails small,
 foreman extremely small.

SIGNALETIC CARD FOR FILING ANTHROPOMETRICALLY

Special form used at Paris when subject is photographed





(Recto, with judicial photograph and finger-prints.)

height, 1m	Head	length	left foot	Color of Left Iris	class	age	
curvature		width	left medius		areola	born on	18
reach, 1m		bi-zyg.	left auricular		periph.	at	in
trunk, 0m		right ear	left forearm		pecul.	app. age	



[For mechanical reasons the headings of the French card are necessarily reproduced in the following fac-similes of finger-prints taken by Dr. Bertillon in Paris.]

Hair	color	pecul.	Build	color	pecul.
Com-plexion	Pigment.	Sanguin.			
	pecul.				
Taken at Paris, on	189				
by					
verified on					

Impression of right: Thumb Index Medius and Annular

Remarks

1. The other side (*verso*) of the card represented above is exactly like the one on plate 79, as far as the heading "Present imprisonment, specification of offense," inclusive; and the rest of it is a reproduction of the portion of the card on plate 78 provided for the notes and statement of peculiar marks, beginning "III.—Notes on the measurements," etc., and omitting the headings at the bottom for dates of taking and verifying the signalment.

2. In all the cards now in use by the French government the bi-zygomatic diameter (see p. 259) is substituted for the width of the right ear, as above.

3. In most places except Paris the cards used for the anthropometrical and alphabetical files (see p. 67) differ only in size, and both have the form represented on plates 78 and 79. In Paris, however, the cards for the anthropometrical file are now of one of the forms given above and in plate 79 *b*; while those filed alphabetically are exactly like the form on plates 78 and 79, except that the bi-zygomatic diameter is substituted for the width of ear, and that two lines are left for the notes above and outside of the double columns for the statement of peculiar marks, instead of one line at the beginning of the first column.

SIGNALETIC CARD FOR FILING ANTHROPOMETRICALLY

Special form used at Paris when no photograph is taken

(Recto, with space for finger-prints.)

I.—Anthropometrical Observations.

height, 1 ^m _____	Head	length _____	left foot _____	Color of Left Iris	class _____	age _____
curvature _____		width _____	left medius _____		areola _____	born on _____ 18 _____
reach, 1 ^m _____		bi-zyg. _____	left auricular _____		periphery _____	at _____
trunk, 0 ^m _____		right ear _____	left forearm _____		pecul. _____	in _____	app. age _____

II.—Descriptive Information.

Forehead	Arches _____	Nose	Root (depth) _____	Mouth	Chin	Frontal	Labial height _____	Center of Forehead	fronto-nasal _____	
	inclin. _____		ridge _____ base _____				prom. _____		Dimen. _____	naso-buccal _____
	Height _____		Height Projec. Width				border _____		inclin. _____	Cranial height _____
	Width _____										thickness _____	Height _____	malform. _____
pecul. _____	pecul. _____	pecul. _____	pecul. _____	pecul. _____	pecul. _____	pecul. _____	pecul. _____	pecul. _____		

bord. Orig. _____ Sup. _____ Post. _____, opening _____ pecul. _____
 lob. contour _____ adhar. _____ model _____ Dimen. _____ pecul. _____
 anti-trg. inclin. _____ profile _____ reversion _____ Dimen. _____ pecul. _____
 fold. infer. _____ super. _____; form _____; separ. _____ Concha: Height _____ Width _____ pecul. _____
 Contour of face _____ Degree of fleshiness _____

Eyebrows	position _____	Eyeballs	opening _____	Wrinkles	Build	Neck, Length _____ Width _____				
	direction _____		model upper _____				ocular _____	Shoulders, Width _____ inch. _____		
	form _____		pecul. _____						buccal _____	Girth _____
	dimen. _____		projection _____							
pecul. _____	pecul. _____	expression _____	Bearing, speech, dress, etc. _____							
color _____	orbits _____									

Hairy system and Complexion.

Hair	color _____	Beard	color _____
	nature _____		nature _____
	insertion _____		implant. _____
	abundance _____		pecul. _____

Complexion	Pigment. _____ Sanguin. _____
	pecul. _____

Taken at Paris, on _____ 188 _____

by _____

verified on _____ by _____

[Space for finger-prints.]

Remarks.

1. The verso or reverse of this card is exactly like that of the form with photograph, represented in plate 79a.

2. *Medius*=middle finger; *auricular*=little finger; *index*=first finger; *annular*=third finger.

Fronto-nasal=connected with the forehead and nose; *naso-buccal*=connected with the nose and mouth; *frontal*=connected with the forehead; *ocular*=connected with the eyes; *buccal*=connected with the mouth.

Areola and *periphery*, see p. 134; for the significance of the headings relating to the *ear*, see p. 177; *interocu-*

lar, see p. 196; *pigmentary* and *sanguineous* coloration, see p. 150.

3. In all the signaletic cards given the typographical peculiarities of the French originals (of Dr. Bertillon's own design) are as far as possible preserved, especially as regards the capitalization of the headings, which has a conventional significance: those headings beginning with a capital letter are to be answered only by one of the adjectives *small, medium, large* (or *little, medium, great*), while the rest call for special descriptive terms, figures or names.

LIST OF ABBREVIATIONS AND SIGNS USED

IN THE DESCRIPTIVE FORMULAE OF THE IRIS

COLORS

Quality of the

RESPONSE

absent or almost imperceptible
dentelated
concentric
radiating
dentelated-concentric, etc

Quality of the pigment

J. yellow
or. orange
ch. chestnut
mar. maroon

Tone of the shade


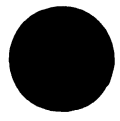
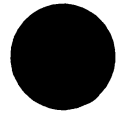
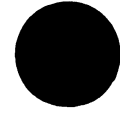

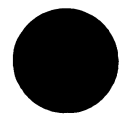
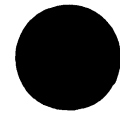
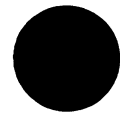

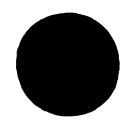
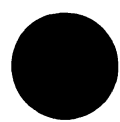
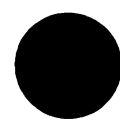
cl. light
m. medium
f. deep
tr. f. very deep

shade of the iris
ery
az. azure
i. intermediate (violet)
ard. slaty

r. greenish
hl. indicates that the pigmentation of the periphery is of a shade identical with that of the areola (see column R).

ing draws attention to the total predominance of the term underlined, while the hifies that the qualification enclosed appears there only as an aid to the memory. te demands of the classification. The sign written before the third line indicates that the two zones analyzed separately, areola and periphery, are of equal important coloration of the eye

**CLASS 6: Pigmentation greenish-maroon, and
CLASS 7: pure maroon**

<i>I</i>	<i>P</i>	<i>Q</i>	<i>R</i>
			
6-4 <i>r. m.</i> <i>p. d.</i>	6-4-5 <i>r. mar. cl.</i> <i>mar. j. t. cl.</i>	6-7 <i>r. mar. m.</i> <i>mar. (j. r.) m.</i>	7 <i>r. mar. m.</i> <i>id.</i>
			
4 <i>r. m.</i> <i>r. m.</i>	6-5 <i>r. mar. m.</i> <i>j. r. m.</i>	7-6 <i>r. mar. f.</i> <i>mar. (j. r.) m.</i>	7 <i>r. mar. f.</i> <i>id.</i> <i>outer zone nucleus</i>
			
4 <i>r. f.</i> <i>r. f.</i>	6-7 <i>r. mar. f.</i> <i>mar. j. r. t. j.</i>	6-7 <i>r. mar. f.</i> <i>mar. (j.) f.</i>	7 <i>r. mar. tr. f.</i> <i>id.</i>

INDEX

This index contains not only references to each of the technical terms contained in the volume (1), and to all the details of its subject-matter, but also a vocabulary of those French words occurring in the headings of foreign signalitic cards, or commonly used in the manuscript entries for which they call, which are so different from the English words by which they have been rendered as not to be recognizable at once by any experienced and intelligent operator. These foreign words are printed in *italics*, while the words and abbreviations appearing in headings on the English cards (plates 78-81) are in **bold-faced roman** and the abbreviations used in replying to them appear, in accordance with the general system of typography in the body of the text (see notes on pp. 96 and 169), in **bold-faced italics**. The abbreviations thus thrown into relief are those prescribed by Dr. Bertillon (brought together in plates 60 *d* and 77 *a*) save in exceptional cases (marked with an asterisk, *) where the English word is so short as to need no abbreviation, or where Bertillon's abbreviation is so distinctively French and at the same time so cumbersome as to be somewhat awkward for American use. The very few abbreviations of this latter kind appear in ordinary roman type, as well as such of the English alternatives (given in tables 60 *a* and 77 *a*) as have no decided advantage over those of the international code. All the abbreviations for use in manuscript entries are given in capitals or lower-case letters according to the manner in which they ought to be written on the card.

The numerals in italic type refer to the numbers of the plates and tables in the Album; the roman numerals to the pages preceding the Author's Preface, and the arabic numerals in ordinary type to the pages of the body of the text.

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(1) It will be observed that, contrary to the accepted rules of elegant index-making, many of the references are to adjectives or other subordinate words. This arrangement, which has the incidental advantage of saving the student's time, is necessitated by the fact that many such words are in the present work of the first importance, and more likely to be sought for than the substantives.

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