

The following Reports and Papers were read:—

1. *Report on the New Edition of 'Anthropological Notes and Queries.'*<sup>1</sup>

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2. *Report on Photographs of Anthropological Interest.*  
See Reports, p. 592.

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3. *The Presidential Address was delivered.* See p. 861.

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4. *The Personal Equation in Anthropometry.* By Dr. J. G. GARSON.

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5. *Finger Prints of Young Children.* By FRANCIS GALTON, D.C.L., F.R.S.

At the times when I published my book on 'Finger Prints,' and subsequent works on the same subject, no material existed for determining the age at which the patterns of the ridges on the fingers and their numerous details became first established. The ridges were known to be traceable in some degree long before birth, but it was not known whether they had acquired, even in early childhood, that strange complexity of distribution which I showed to be permanent from youth upwards. The wish to complete my work by investigating this interesting physiological point was sharpened by a request for an opinion on the following case. The police authorities in — (I will not say what country) received information that a baby who was heir to a great title and estate might be kidnapped for the sake of extorting ransom. Such cases have occurred in history, and it is needless to insist on the miserable doubts and legal difficulties that would arise if a stolen infant should be restored after the lapse of some time without satisfactory identification. I was asked whether prints of the fingers of a baby would serve for ever afterwards to identify him, and to prove that he was not a changeling.

An American lady—Mrs. John Gardiner, of Boulder, Colorado—kindly volunteered to collect finger prints of infants for me. The following remarks are confined to those of her own child Dorothy, whose fingers she printed every day after that of her birth for a short time, then less frequently, and afterwards yearly, the child being now  $4\frac{1}{2}$  years old. By selecting the best of the numerous specimens of the earlier dates, I compiled three sets of all the ten fingers. In the first set the age of the child lay between 9 days and a month. In the second, between 1 month and 6 weeks; in the third, between 5 and 7 months. In addition, I have a fourth set taken at 17 months, a fifth at  $2\frac{1}{2}$  years, and a sixth at  $4\frac{1}{2}$  years.

It is easy to those who have learnt the art, and who have the necessary materials, to print with sharpness the fingers of children who have attained six years of age or upwards; but it is exceedingly difficult to print the fingers of babies. Far more delicate printing is needed on account of the low relief of the ridges and the minuteness of the pattern. At the same time, babies are most difficult to deal with, the persistent closing of their fists being not the least of the difficulties. The result is that many undecipherable blurs are made before one moderate success is attained, and, at the best, the print is made by a mere dab of the finger, rolled impressions being practically impossible. Consequently the first four sets are all more or less blotted, and none show more than a small part of that surface which it is desirable to print.

The fifth and sixth sets are clear though pale, for it was necessary to spread the ink very thinly to avoid blots; otherwise they are perfectly suited for comparisons. The two sets agree in every detail, and show the same order of complexity that is found in the ridges of adult persons; so, subject to the possibility of some minute after change, I should infer that the print of a child's fingers at the age of  $2\frac{1}{2}$  years would serve to identify him ever after. It will be interesting

<sup>1</sup> The book was published in November.

after the lapse of some years to ascertain whether this is the case with Miss Dorothy Gardiner.

The first four sets are much more difficult to deal with. I have scrutinised them, and compared them several times with the last two sets and with one another, and my conclusions are as follows:—

(1) The *type* of the pattern is never doubtful to a practised eye. To an unpractised eye the result of a slight twist of the finger at the moment of printing, which gives a specious air of circularity, might convey the false impression of a whorl to what was really an arch or a loop. (2) The character of the core is defined within narrow limits, but not always accurately. Thus in one instance, the core of a loop in the  $2\frac{1}{2}$  and  $4\frac{1}{2}$  year sets was a clear 'staple.' At 17 months the staple was connected to the curve next above it by a small isthmus; in babyhood the staple and the ridge were joined—whether by a blot or in reality I cannot say. (3) A similar absence of distinction between ridges that are afterwards clearly separated is often found near the V point. It is thus impossible to count the number of ridges with accuracy that lie between the core and the V, and the entry has often to take such a form at  $9 + ?$  the ? proving to be any number between one and perhaps eight ridges. It is, however, a great point to be assured that the real number is *not less* than 9. (4) The doubt (as I pointed out in my book) which is always attached to the exact way in which a new ridge arises is greatly increased in these prints. No weight should be assigned to the character of the junction or ending, but only to the fact that somehow a new ridge has become interpolated.

The study of these prints is an excellent discipline in the art of decipherment. I have counted sixty-eight details in the prints of these ten fingers that can be identified throughout all six sets, unless obliterated in some one of them by a blot. In the majority of cases the identity is unquestionable; in the others it may be trusted within narrow limits. I have therefore little doubt that the prints of all ten fingers of a baby, if taken as clearly as those I have dealt with, would suffice for after identification by an expert, but by an expert only.

It should be added that I have had as yet no opportunity of taking finger prints from infants who are two or even more months younger than babies ordinarily are at the time of their births—I mean such as are now successfully reared in warmed glass cases. These premature infants are passive, and in that respect easy to deal with, but they are tiny creatures who require great tenderness in handling. I think that the impressions most likely to succeed would be those that their greasy fingers might leave on a highly polished metal plate, to be afterwards photographed under suitable illumination.

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6. *Finger Prints and the Detection of Crime in India, describing the System of classifying Finger Prints and how all the great Departments in India have brought Finger Prints into use.* By E. R. HENRY, C.S.I., Inspector-General of Police, Bengal Civil Service.

The author refers to the importance of fixing human personality so that no efforts made to confuse it subsequently may prove availing. Of this problem the Bertillon system offered first scientific solution. But experience has shown that the 'Personal Equation' error of measures predominates so much as to vitiate seriously the correctness of the recorded results under that system. Finger prints, on the other hand, being absolute impressions taken from body under conditions which eliminate error in transcribing or recording, the 'Personal Equation' error is reduced to a minimum. Taking the impressions of all ten digits occupies only a fraction of the time required for measuring, while search is more exhaustive and many times more rapid. This new system has been introduced on a most extensive scale throughout British India, where the Postal, Survey, Registration, Medical, Pensions, Emigration, Police, Opium, and other great Departments have adopted it, and the Legislature has recognised it by passing, with the strong