

A MORNING WITH THE ANTHROPOMETRIC DETECTIVES.

AN INTERVIEW WITH MR. FRANCIS GALTON, F.R.S.

THE way to the Anthropometric Laboratory at South Kensington lies through a long blank gallery with worn-eaten, ink-stained floors. But ~~just at present~~ ^{just at present} ~~justly~~ ^{justly} tables and depressed students hold the field, and if necessary to traverse a ~~rather~~ ^{rather} gallery, ~~many~~ ^{many} given over to ~~some~~ ^{some} glass cases. But here at last is the laboratory, and here is Mr. Galton (who has made it a sort of hobby), with the hearty, cheery welcome of a gentleman and a scholar. Outside is a city of confusion. What was once—if not Troy—at least the Danish Exhibition, is now the ruins of a paste-board Alps and a deserted village in dingy débris. But within reign order and precision, and tests of the nicest accuracy. Here is an instrument for testing the sight. The apparatus is a long and light frame with a single eye-hole. Blocks of wood about $1\frac{1}{4}$ in. wide and $2\frac{1}{2}$ in. high, each with lines of figures in diamond print pasted upon its face, are fastened square to the line of sight at distances of 7, 9, 11, and so on up to 41 in. The blocks are disposed in a curve, so that when viewed from the eye-hole each stands just clear of the preceding one. The eyes are tested separately, as it often occurs that they differ considerably in efficiency without the person being aware of the fact. No optician should be without such an instrument. As every season adds by fashion's decree another shade of colour, a man may be excused for being unable to name a shade at a moment's notice. But it is very desirable to know if you are what is called "colour blind," and Mr. Galton has designed a frame which holds skeins of coloured wools delicately differing. By means of this a man is approved or detected at once. In days when every railway station has an automatic machine of some kind, it is superfluous to describe most of the machines. However, a word or two may be spent on the apparatus for testing the relative acuteness of hearing. An indiarubber tube communicates through a whistle of small bore, and of a depth that can be varied at will by lifting or lowering a long handle so as to make it give fifty, forty, thirty, twenty, or any other number of thousand air vibrations in a second. In each case the air that is blown through the whistle conveys to some the sensation of a shrill and pure note, while others hear merely a puff or nothing at all. Every person has his limits of power for hearing high notes, quite independently of the general acuteness of his hearing. The test lies in ascertaining the largest number of vibrations in a second, or, in other words, the shrillest note that is audible. Here on the walls are two trees painted with the pigment from the human hair. Nestling under the shadow of a glorified camera are albums of composite photographs. They represent the sum total of whole families or groups of criminals and consumptives. In other odd corners are the measurements of famous giants and dwarfs, and tables of the weight lost by children in illness. After looking round I asked;—

"Now, will you tell me, Mr. Galton, how you come to inhabit this lodge in the wilderness? Is this the appreciation of a grateful country?"

"Well, I'm thankful enough to get even a footing where space is so valuable. The Commissioners of 1851 placed at my disposal the land rent free, and I have built this laboratory at my own cost. The South Kensington

authorities, to whom I owe my best thanks, give access to it through their galleries. Of course I may be turned out to-morrow."

"In dreams and amid scenery we often feel certain that we have seen the same things before in some previous state of being. Surely what I see is a transcript of an earlier experience?"

"Yes, it is but a development on a more permanent basis of the Anthropometric Laboratory that I established in the Health Exhibition of 1884, and at which nearly 10,000 people were measured. They there paid threepence each, and it was self-supporting. Here I began to do the same, but so few persons presented themselves, that I thought it best to throw it open, free of all charge, at least for the present; I was especially willing to do so to the South Kensington students. It is my hobby, and after all, not a very costly one."

"Every man with a mission desires to sow the good seed as widely as possible. May I ask you if you have laboratories elsewhere?"

"At Cambridge there is one. Its existence is due to the fact that I was asked three or four years ago to give the Rede university lecture there, and I chose for my subject the 'Measurement of Human Faculty.' This attracted attention to the matter. I offered to give instruments, and some Cambridge friends undertook to look after them. The laboratory has now found a home in the Philosophical Society, and supports itself. A valuable paper on the first results has been already written by Dr. Venn, and I too have published some conclusions about the relative head growth of the able and less able students. I should like to set laboratories agoing elsewhere, but the conditions of success are difficult to fulfil. Some capable man must really interest himself, and there must be a convenient locality. I have talked about it at Oxford and elsewhere, but not yet with success. The ladies' colleges ought, I think, to have a few of the principal measurements taken regularly, to ensure that the physique and eyesight of the girls do not suffer. A laboratory was established this and last year in connection with the British Association. I lent my instruments and assistant to work them at Bath six weeks ago, and many useful measurements have been made. It promises to become a regular part of the British Association's arrangements."

"The object of your laboratory is, as I understand it, to show to the public the simplicity of the instruments and methods by which the chief physical characteristics of man may be measured and recorded."

"That is so in part, and if you will allow my assistant to measure yours you will be better able to understand the details of the ordinary measurements made here."

"Look," resumed Mr. Galton, "at these black radiating lines; are they all the same thickness?"

I replied that certain of them, however the card was held, appeared thicker than the rest. This marked me out at once as "stigmatic," as having *the curvature of the eye different in two directions.*

"Here," said Mr. Galton, in reply to my demand for interesting points, "is a curious fact with regard to the average heights of males and females. Between the ages of twelve and a half and fourteen and a half the girl is tallest. Again, the average height of the town artisan is three inches lower than the professional man. Good feeding and good rooms have that amount of effect. As to the university men, those young athletes of the present day seem to belong to quite another race to those measured in my laboratory in the Health Exhibition. Their breathing capacity and strength are of a far higher order. I have found as a rule that the abler persons have more delicacy of sensation on the whole than others. I first noticed it in their faculty of distinguishing weights by holding them in the hand. In this test, contrary to all preconceived ideas, blind boys failed ignominiously."

"Well," I remarked, "then preachers must reconsider some of the cant of the compensation doctrine. They have been comforting those that sit in darkness, and drawing lessons and illustrations from the supposed fact that blind people find all their other senses intensified by way of compensation."

"I have tested them, so far as they could be persuaded to allow any test, and I found that they broke down in spite of big assertions, which they have been taught to believe."

It is sometimes very dangerous for an interviewer to ask a man of theory, even with the most reverential of faces and with inflexions of voice the most earnest, what, *if any* (this should be a whispered aside), is the practical tendency of his studies. However, Mr. Galton does not abruptly terminate the interview at this point, but is ready as soon as one of his reaction tests with a reason for the hope that is in him.

"In the first place the Laboratory tells a man his rank among his fellows. He comes from time to time and is able to make such comparisons as enable him to see whether he is advancing or retrograding. Boys, for instance, are averse to retrograding, and so the Laboratory has a moral effect in stimulating exercises, physical and mental. Or look at its medical value among the young. Suppose an itinerating Laboratory visited every school, how many cases of defective eyesight might be detected and treated in time, and how many other remediable faults in development would provoke timely warning? Desert the individual in favour of a larger survey, and you will find in our records statistical data of considerable value. For instance, dumb though they are, what splendid detectives our instruments might prove."

"Splendid detectives! I am not, I hope, in a department of the Criminal Investigation Department, unconsciously yielding convincing proofs of personal identity with some scoundrel hitherto unhung."

"Well, without a personal application, anthropometric records might serve to hang the scoundrel and to set free the innocent. M. Alphonse Bertillon, of Paris, was the first to point out a plan in indexing prisoners according to their measurements. His immediate object was to afford means of discovering whether an arrested person had been previously convicted. It is impossible for the French police to make effective search through their vast collections of photographs, and he therefore suggested a classification, according to the anthropometric record. All the measurements and other remarks concerning each person are written opposite to printed headings upon a thick card $5\frac{1}{2}$ in. square. The most convenient primary basis is found to be not stature, but the length and breadth of the head, and that of

the foot and middle finger. It would be too long a matter to go into the subdivisions and categories, but the system is at work in France, and it is claimed for it that it is eminently successful. I myself witnessed it in full work, and saw an old offender most neatly detected only three weeks ago."

Heredity and training have both done a great deal for Mr. Galton. So far as he is a scientist he comes of the Darwin stock, then trained in early life to the medical profession, and afterwards becoming an African traveller before he settled down to the routine of life. As early as 1846 he was exploring the White Nile, and a few years later he received the Geographical Society's gold medal for his exploration of Damara and Ovampo Lands in South Africa from Walfisch Bay. But his recent Royal Society medal, his books, his anthropological presidency, and so forth, past and present—are they not written in the chronicles of the men of science?

The world naturally connects his name with studies on the laws and consequences of heredity, with inquiries into our faculties and developments, and with allied subjects of research, but in 1863 he published the first attempt to chart the progress of the elements of weather on a large scale, and in the course of it for the first time established the existence and theory of the anti-cyclones, of which we now hear so much. His meteorographical studies and statistical bent naturally suggested his appointment, after the death of Fitzroy, as a member of the Board of Trade Committee, to examine into the past and future duties of the Meteorological Office, and he is still one of the council to which the parliamentary grant is entrusted.