FAMILY HISTORIES AND EUGENICS.

IN the thirteenth bulletin (June, 1915) from the Eugenics Record Office (Cold Spring Harbour, Long Island, New York), Messrs. C. B. Davenport and H. H. Laughlin give precise directions for making "a eugenical family study." The general lines are similar to those of the records of family histories which Sir Francis Galton sought to initiate in Britain many years ago. Such a study, carefully made, is, the authors tell us, important to the individual, who may understand and guide himself better if he knows his hereditary assets and liabilities; important to society, which "can treat the delinquent individual more reasonably, more effectively, and more humanely, if it knows the 'past performance' of his germ-plasm"; important with a view to "vocational selection," the end of which is to get the right man in the right place; important for education, which should take some account of the inborn potentialities of the individual; and important, finally, in the selection of marriage-mates, or at least in avoiding obviously unfit unions.

The bulletin tells the inquirer how to construct his "family tree" when the facts have been secured, and how to make an "individual analysis." This rather formidable enterprise involves answering sixty questions as to life-history, and as to physical, mental, and temperamental traits. The framing of the questions embodies long experience, and even to put them to oneself is interesting. Drs. Hoch and Amsden supply an even more elaborate *questionnaire* as to mental and temperamental traits. It will be hard to discover any trait that this catechism leaves out. It begins by asking the victim "if his education is up to his opportunities," and it ends by asking in what he gets "his deepest satisfaction." The questions are much more penetrating than those of the census paper or the income-tax return, and some of them seem to demand for their truthful answer a rare degree of detachment. But the authors meet this objection by pointing out that the records are to be kept as confidential documents in the central bureau, and that one must not think too much of personal privacy when the welfare of the race is concerned. Certain it is that a scientific genealogy is worth working towards, and that this bulletin is a useful step in that direction—useful in educating public opinion and in giving critics something to work on. In this connection it may be doubted, for instance, whether it is a wise discretion to refrain from any attempt to differentiate in the recording of family data between heritable and non-heritable traits. It may also be asked whether there is not a distinct risk of developing a self-conscious pre-occupation about one's "traits"—that Herbert Spencer was always talking about—and a paralysing obsessional conviction of the fatalism of heredity, which is only one side of the case.

CHARACTER AND INTELLIGENCE.

THE *British Journal of Psychology* has published as a monograph supplement (Cambridge University Press) the results of a research by Mr. Edward Webb on character and intelligence. The subjects of the inquiry were ninety-eight men students at a training college in 1912, ninety-six students at the same college in 1913, and four groups of schoolboys, amounting in all to 140. At the training college the prefects (second-year students), and at the schools the class-masters were utilised as judges, a pair of independent judges being employed in each case. Very careful instructions were given and detailed lists of qualities supplied. Examination results and experimental tests of intelligence were also used. All the assessments were ultimately translated into a scale of marks from +3 to −3. The "reliability coefficients" (correlations between the estimates of the same quality in the same individual by the two judges) were in many cases very low, the average being rather under 0·5, and nearly one-seventh of the qualities marked were rejected on the ground of unreliability. For those retained the average reliability coefficient is 0·55. The lowness of the "reliability coefficient" is held in part to be due to the care taken to secure independence between the estimates of the two judges. For intelligence-qualities the results are held to give a "strikingly thorough support" to the theory of a general factor. The deduced correlations of the general factor with the various estimates are discussed in detail, and give some interesting and unexpected results. Amongst the latter may be mentioned the fact that sense of humour, which has little correlation with the general factor, is fairly highly correlated with the estimates, the prefects' judgments being apparently biased by this quality. The character-qualities are discussed in the same way, and here again there is held to be evidence of a central factor, and this factor is in some close relation to "persistence of motives." This general factor markedly dominates all the correlations yielded by the estimates of moral qualities, the deeper social virtues, perseverance and persistence; also, negatively, qualities related to instability of the emotions and the lighter side of sociality.

SCIENCE IN THE WAR AND AFTER THE WAR.[1]

IT is universally acknowledged that the outcome of the present war must be an entirely new chapter in human history and a point of fresh departure in social, economical, and intellectual life. Hence it is well to begin even now to take stock of our resources, to examine not only the reasons for our deficiencies but the directions of our reforms. Particularly are we concerned with the improved attitude which we shall have to take nationally with regard to all that study and knowledge which we call science and scientific research and invention. Hence an important matter is to consider the position of science in the war and after the war.

Scientific knowledge is the accumulation of exact information concerning the facts and laws of nature, and the scientific method is the process by which we gain it, viz., by experiment or observation and logical deduction therefrom.

The cardinal fact which lies at the basis of all this nature-study is that there is no finality in it. Its possibilities are infinite, and we can never touch bottom in all that there is to be known about the simplest objects or phenomena of nature.

Hence the very essence of scientific study is that the votary should himself make some advances. Merely to know what others have done or discovered may be necessary, but this alone does not make a scientific student. Accordingly the training required is that which imparts the power to make new knowledge, and the results must be judged by the degree to which it succeeds in so doing.

At this stage we may distinguish, however, two classes of workers. There are first those who are most interested in new facts or principles regardless of immediate utility, and, secondly, those who show ability in utilising this knowledge in so-called useful applications of science. The first class em-

[1] An introductory lecture delivered at University College, London, on October 6, by Prof. J. A. Fleming, F.R.S.