THE

EUGENICS REVIEW

THE FIRST INTERNATIONAL EUGENICS CONGRESS.

By EDGAR SCHUSTER, M.A., D.Sc.

INTRODUCTION.

The following account of the proceedings of the Congress is strictly limited in its aim. An endeavour has been made to give a summary of most of the papers read, arranged in such a way as to show their bearing on certain problems, the study of which forms a considerable part of the science of eugenics. It is, perhaps, superfluous in the pages of this REVIEW to repeat Galton's classical definition, namely, that "Eugenics is the study of agencies, under social control, which may improve or impair the racial qualities of future generations either physically or mentally." We do so in order to point out that it should be interpreted as describing the aim of the science and not as limiting its scope. In practice the agencies affecting future generations must be investigated without reference to the possibility of subjecting them to social control, and since we know as little of this possibility as we do of the agencies referred to themselves, its study constitutes an important branch of the science, and in the classification here adopted of the problems discussed at the congress it forms one of the main subdivisions.

As heredity is the backbone of Eugenics, in the first group must be placed papers dealing with heredity. Yet heredity itself can have little effect on a population unless it works in conjunction with some sort of selection for parenthood. The selective agencies thus follow logically as the second branch of the subject and papers dealing with them are placed in the second category. Of these agencies the most important is unquestionably the manner in which the birth rate varies in the different social and racial groups. The consideration of this leads to a secondary question, namely: Is the differential nature of birth rate to be classed among the causes tending to bring about racial deterioration or the reverse? In other words, do those sections of society in which the birth rate is lowest possess an innate and inheritable superiority, mentally and physically, over those in which it is highest? Answering this question in somewhat contradictory ways are three papers dealing with the qualities of different social classes. An allied problem is to determine whether the limitation of the size of families affects the average quality of the children by increasing the relative number of the earlier born (first-born, second-born, etc.) who may be superior or inferior to those born later.

Two other selective agencies were discussed at the Congress, namely war, including therewith the necessary preparations for it, and the practice of midwifery.

The papers of the third class deal with environmental causes which acting on the parents may influence the nature of the offspring. Among the conditions examined are the age of the parents at the birth of the children. The age of the parents at marriage. The season of the year at which conception occurred. Parental alcoholism and syphilis.

In a fourth class may be placed the contributions of history and anthropology. They endeavour to trace the actual changes undergone by human races and societies during long periods of time.

We then come to the application of social control. This subject is approached by the examination of existing methods and the suggestion of new ones. For example, American legislation, eugenic in its bearing, is discussed in two papers.

A third speaker deals with education in England, and proposes ways in which it might be made more effective eugenically. Reasons for including eugenics in the medical curriculum are given in a fourth contribution, and the systematic inspection of children is advocated in a fifth. Other papers treat of methods for the prophylaxis of syphilis and the taxation of alcoholic beverages according to their strength, as preventatives of two dysgenic agencies.

I. Heredity.

(a) The Inheritance of Epilepsy, Feeble-mindedness and Insanity.

The data discussed by Dr. Weeks and Professor Davenport in their joint paper, "A First Study of the Inheritance of Epilepsy," have been supplemented by further researches of their "field" workers and form the basis of Dr. Weeks' contribution[1] to the Congress. The collection of pedigrees on which it is based appears to be a most valuable and reliable one and it is to be hoped that it will eventually be published in full, with all descriptive notes necessary to make it intelligible.

The author's theory as to the inheritance of epilepsy and feeble-mindedness can be briefly stated as follows:—

The presence in the zygote of a particular factor or determiner is necessary to ensure normal development. If it is absent feeble-mindedness or epilepsy will be the result. Individuals in whom it is absent are called "nulliplex"; according to the older terminology they would be styled pure recessives, or homozygous with regard to the absence of this particular factor.

The term "Simplex" is used to describe the heterozygote. Simplex individuals are said to possess an intermediate mental status, though some are apparently normal. It is nowhere precisely stated what are the symptoms of the "intermediate mental status." But the majority of persons classified in the tables as simplex are either alcoholic or neurotic.

[1] The Inheritance of Epilepsy, by David Fairchild Weeks, M.D., Medical Superintendent and Executive Officer, The New Jersey State Village for Epileptics, Skillman, U.S.A.

Persons who are really normal are called duplex. They have the normal development determiner twice over, or are homozygous with regard to its presence.

If this theory is correct, then when nulliplex is mated with nulliplex, one would expect to find the offspring all nulliplex. That is to say that the children of parents who are both feeble-minded or epileptic should all be feeble-minded or epileptic themselves. An examination of the tables shows that there are a considerable number of exceptions to this rule, but the obvious difficulty of classifying all cases correctly may account for them. On the whole it may be said that the results are not incompatible with the theory.

With regard to the other types of matings Dr. Weeks cannot claim a very close agreement between the actual results and the theoretical expectation. Difficulties of classification may be again called in to account for the discrepancy, and in addition two other factors. One of the two is suggested by the author, namely, that the percentage of nulliplex (*i.e.*, feeble-minded or epileptic) among the offspring, where it is, as it generally is, in excess of the mendelian expectation, has been increased by the direct action of parental alcoholism. But there is another and more obvious explanation which he does not appear to have taken into account, namely, the manner in which the material was collected. This has had the effect that almost all the fraternities considered contain at least one epileptic. Thus the composition of the chosen families cannot be taken to represent fairly what would be the character of the offspring of matings of the various classes considered, if the parents had been selected entirely according to their own characteristics and not partly on account of the fact that in most cases one of the children was an epileptic.

It must be allowed that a good *primâ facie* case has been made out for the theory advocated by Dr. Weeks, a theory which if fully established would be a very distinct step in advance in the study of the inheritance of epilepsy. That it only covers a small part of the ground he would, no doubt, be the first to acknowledge. There must be some difference in the germ-plasm to differentiate such very different conditions as

epilepsy and feeble-mindedness, and in this connection it may be noted that the tables show a distinct tendency towards the specific inheritance of these characters, thus the proportion of epileptic to feeble-minded among the children of wholly epileptic parents is higher than when one of the parents is feeble-minded, and considerably higher than when both are feeble-minded.

Dr. Mott[1] considers firstly the supposed increase in insanity. In the County of London since the year 1889 the amount of registered lunacy has doubled, although the population has remained nearly stationary. This fact he attributes not to any real increase of insanity but to the three following factors: (1) The standard of sanity has been raised, largely owing to the increased provision of accommodation for the insane; cases which formerly would have been discharged owing to lack of accommodation in the asylums are now retained. (2) Better sanitation has led to a marked decrease in the death rate from tuberculosis, dysentery and pneumonia in asylums; in consequence of this the number of chronic incurable cases is rapidly increasing. (3) The Poor Law Guardians, induced by a Government Grant of 4s. per week per pauper lunatic, are now more ready to send cases of senile dementia to the asylums than to retain them in the Workhouses.

Of the environmental causes tending to produce insanity, Dr. Mott does not lay very great stress on alcohol. Though an advocate of " temperate measures . . . for the control and regulation of the liquor traffic and the segregation of the chronic inebriate," he does not believe that " certifiable insanity would diminish to anything like the extent that is fondly cherished by total abstainers if alcohol were abolished." He quotes in support of this view the researches of Dr. Bevan Lewis and Dr. Sullivan. But if alcohol is not so active as a cause of lunacy as has been and is sometimes supposed, modern investigations show more and more clearly the disastrous effects of syphilis. Twenty per cent. of the deaths in the London County Asylums are due to general paralysis produced by syphilis, and five or ten

[1] Heredity and Eugenics in Relation to Insanity, by Dr. F. W. Mott, F.R.S., Pathologist to the London County Asylums, Physician to Charing Cross Hospital.

per cent. more to brain disease due to the same cause. When parental syphilis is transmitted to the offspring it causes death in the majority of cases either before or shortly after birth, but in spite of this it can now be demonstrated that in many cases idiocy, imbecility, feeble-mindedness and sometimes general paralysis result. Thus from a eugenic point of view the disease is one of greatest importance.

The neuropathic inheritance forms the subject of a research of very great value which is being conducted by Dr. Mott in the London County Asylums. A record is being obtained, and is stored on the card system, of all those inmates who have or have had relatives in the asylums. The number already reaches over 3,000. Seven hundred and fifty of these have at present brothers or sisters, fathers or mothers, sons or daughters in the asylums. This is, in itself, "a strong argument in favour of the importance of heredity as a cause of insanity, for it cannot be supposed that if we took 20,000 people from the 4,522,961 inhabitants of London for some random cause we should find 3·5 per cent. of them so closely related, as parents and offspring, brothers and sisters."

From these statistics many questions of importance may be studied with advantage. They show, for instance, that when an insane parent has insane offspring, the latter usually develop the disease at a much earlier period in their lives than the former, or to speak more generally, since the same phenomenon is shown when collateral relationships are considered, that when insanity appears in a stock it appears earlier in the lives of the younger generation than of the older. This process is of eugenic value, since through it the unsound elements are more likely to be weeded out and the degenerate stock from which they spring either ended or mended. It is also of importance in prognosis, for it shows that after the age of 25 there is a greatly decreasing liability of the offspring of insane parents to become insane.

Some facts which may fail to emerge from statistical tabulation are shown by a careful study of individual pedigrees, and the card system inaugurated by Dr. Mott has formed a good starting point from which such pedigrees may be collected.

Examples of these are included in the paper, but cannot be conveniently summarized here.

(b) The Inheritance of Fecundity.

Somewhere in the complex of causes, which have brought about and are bringing about the general but differential decline of the birth rate, the physiological or anatomical characters influencing fecundity must be present if unrecognised. Thus even a purely biological work dealing with the inheritance of fecundity is most valuable in filling a gap in the science of eugenics, while a special welcome must be accorded to a paper which fills it so efficiently as Dr. Raymond Pearl's.[1] This paper must strike the reader as being one of the most remarkable results of the mendelian analysis yet published. Fecundity in fowls can only be judged by the number of eggs laid, an apparently fluctuating character much influenced by environmental conditions, yet Dr. Pearl has demonstrated, in manner which appears hardly to admit of doubt, that its inheritance depends entirely on three gametic factors, which are transmitted in a manner as diagrammatic in its simplicity, as were the green and yellow seed leaves in Mendel's peas. Of the three factors one, designated by the letter F, is anatomical, and two, called respectively L_1 and L_2, are physiological.

The factor F determines whether an ovary shall be developed or not, when it is present the zygote developes into a hen, when absent into a cock. It does not otherwise influence fecundity because fecundity does not appear to be associated with the anatomical characters of the ovary. Every normal healthy hen appears to produce enough egg cells to supply the demands of the greatest egg-laying capacity, and the number of egg cells in the ovary is not apparently correlated with the number of eggs habitually laid. When the factor F is present and the two physiological factors L_1 and L_2 are absent the hen does not lay any winter eggs, and the failure to lay winter eggs is taken as the outward indication of this gametic constitution.

[1] The Inheritance of Fecundity, by Raymond Pearl, Ph.D., Biologist of the Maine Experimental Station, Orono, Maine, U.S.A.

When the factor L_1 is present in addition to F, the hen lays between 0 and 30 winter eggs. It is called the "first production factor."

The highest degree of fecundity is determined by the presence of the "second production factor" L_2 in addition to F and L_1, when this combination is present the hen lays more than 30 winter eggs. When L_2 is present in the absence of L_1 it behaves like L_1 and the hen lays less than 30 eggs. That L_2 is quite distinct from L_1 is shown by the fact that a hen is not more productive when she is homozygous with respect to the presence of L_1 than when she is heterozygous. Whether or no a double dose of L_2 would increase the fecundity cannot unfortunately be determined, because it can only be present in males. The L_2 is never present in the same gamete with F, and as F must be present singly in the female, L_2 can only be introduced once.

With the exception just noted the factors are inherited as independent unit characters on strictly Mendelian lines. Interpreted in this way the recorded results agree with the theoretical expectation in a very striking way in spite of the fact that the three degrees of fecundity are distinguished from one another by a method which in some cases obviously leads to a wrong classification. Yet the rigid and mechanical manner with which the hens are divided into three groups, according to the number of winter eggs laid by them, has the great merit that it excludes the personal equation and the consequent suspicion of possible bias on the part of the observer. This fact, together with the large scale on which the experiments were conducted, should produce considerable degree of confidence in the conclusions drawn. It must, of course, be remembered that they do not form a complete explanation of the facts, as the fluctuations within the individual classes are too high to be neglected, even if their causation does not involve heredity.

With regard to the bearing of these results in Eugenics the two concluding paragraphs of Dr. Pearl's paper may be quoted with advantage; they run as follows:—

"From the eugenic standpoint they (the results) suggest, though of course they do not prove, that possibly some part

of the observed decline in human fecundity in highly civilized races may be due to the dropping out or loss of one or more of the genes (factors, determiners) upon which high fecundity depends, this loss being coincident with the complete cessation of the natural selection of highly fecund types.

"Finally, these results on fecundity in fowls not only emphasize the importance of analytical studies to determine the precise mode of inheritance of human fecundity, but they also furnish a guide and stimulus for the conduct of such studies. If, as is the actual fact, it can be shown that in one animal belonging to the great phylum (the vertebrate) to which man himself belongs fecundity is inherited in simple mendelian fashion, it encourages one to hope that sometime a solution of the same problem may be reached for man. It at least points the way to a mode of attacking this complex problem which gives greater promise of leading ultimately to a solution than does any method which has hitherto been applied to it."

(c) The Study of Inheritance.

Inheritance was treated in a more general way by Professor Punnett[1] and Professor V. G. Ruggeri.[2] The former, whose interesting paper suffered somewhat under the rule limiting the length of time allotted to each speaker, pointed out the importance of studying inheritance by experimental breeding in animals and plants, in order to guide one in the more difficult task of solving the problems of heredity in human beings. The latter gave instances, collected from various published sources, of mendelian inheritance in man. The characters dealt with principally depended on the pigmentation of the skin, hair, and eyes. Full references are given to the original publications so that Professor Ruggeri's paper will be found of value as a guide to them.

[1] Genetics and Eugenics, by R. C. Punnett, Professor of Biology in the University of Cambridge.

[2] Le Considetti Leggi dell' ereditarietâ nell' uomo, Prof. V. Giuffrida-Ruggeri, Universitâ di Napoli.

II. The Selective Agencies.

(a) *The Differential Birth Rate.*

The differential birth rate is a phenomenon which is regarded with suspicion and fear, and the examination of its nature and causes constitutes one of the most important branches of the science of eugenics. The problem is one of considerable complexity, and it can only be solved by statistical treatment requiring a vast mass of data of an appropriate kind. The Congress is, therefore, fortunate in having secured two papers on the subject, on the conclusions of which reliance may be placed, namely, those of M. March and Dr. Hoffman. They treat the subject from an entirely different standpoint since M. March has investigated the relative fertility of different sections of the French people classed according to their occupation, while Dr. Hoffman is concerned with the relative productiveness of different nationalities in the American State of Rhode Island. He has, unfortunately, neglected the economic factor which may be responsible for some of the international differences of fecundity which he records. M. March's[1] paper may best be described by quoting a translation of his own abstract of it, which runs as follows:—

"Statistics of families furnish, perhaps, the most appropriate data for the examination of the factors which govern the productiveness of marriages or their sterility.

"Statistics concerning the children born in the eleven and a half million French families, classed according to occupation, have been prepared in France for the first time as a result of the census of 1906. These statistics give information as to the number of children per family, either alive on the day of the census or previously deceased, in each occupation, for all the families in the whole country taken together, and for the different provinces. Further, a special investigation of the 200,000 families of employees and workmen in the public services has furnished more circumstantial details, which have enabled the number of children and number of deaths of

[1] La Fertilité des Mariages suivant la Profession et la situation sociale, par M. Lucien March, Directeur de la Statistique Générale de la France.

children in a family to be brought into relation with the income of the head.

"The results obtained by the method described above are the subject of this report. The effects of occupation, social position and income are analysed by means of co-efficients expressing the productiveness of marriages, after eliminating the influence of such factors as duration of marriage, age, and habitat, all of which may obviously affect the productiveness of a marriage.

"These results confirm what has been learnt from previous researches of the fertility of different social classes, but they go further in that they show that the difference is not exclusively dependent on income.

"In general there are more children per family in the families of workmen than in the families of employers, and the latter contain more than those of employees other than workmen. Further, one finds industries in which the number of children in the employers' families is larger than in the families of workmen in other industries. Thus, differences are introduced by the occupation. Industries employing many hands seem the more favourable to the production of large families, both among workmen and among employers. Agriculture, in which a large number of persons are engaged in France, does not seem to conduce to fertility. Fishermen and sailors in the merchant service, on the other hand, appear to form the class in which fertility is the most considerable.

"The importance of the occupational factor is such that we could place its influence on the same plane as that of 'concentration' of population, with which it is in close relation, since persons following certain classes of occupation, as for instance the members of the liberal professions, and clerks and other salaried employees are most numerous in towns.

"It does not appear that in France casual and unskilled labourers, persons in the receipt of Poor Law relief, etc., are specially prolific. There is not thus in reality too much risk of seeing the renewal of the population carried out in a dangerous manner by its least valuable section. However, even among the working class the most highly paid occupations

are not those among which one finds the greatest number of children.

"The economic, social and moral burden of children is a factor bound up in a complex manner, not only with the individual conditions of existence, but also with the transformations of society, progress in manners and customs, and the conception which one forms of life.

"It is the burden which must be alleviated, where alleviation would be most effective and produce the best results, in order to put a stop to a movement which may be dangerous to civilisation."

Dr. Hoffman's paper deals with a problem in eugenics of great importance to the newer nations whose population increases largely by immigration, namely the fecundity of the different elements thus introduced, compared one with another and with the native born. The data used were collected in the State census of Rhode Island in the year 1905. Whether judged by the percentage of married women who were childless or by the average number of children per family, the native born are found to be considerably less productive than the immigrants. The latter, divided up according to nationality may be placed in the following order according to the average number of children for each married woman:—French Canadians, Russians, Italians, Irish, Scotch and Welsh, English, German, Swedish, English Canadian, Polish. The actual numbers range from 4·42 down to 2·31, while the native born come lower than the lowest with 2·06. Both among native born and immigrants the percentage of childless married women was lowest among the Jews and highest among the Protestants, the Roman Catholic lying between the two. In each religious group the natives were less productive than the foreigners. Comparison of the 1905 census with that of 1885 shows that the average number of children for each married woman has decreased from 2·81 to 2·06 among the natives, and from 4·69 to 3·35 among the immigrants.

(b) The Relative Value, Mental and Physical, of the different Social Grades.

The consideration of the differences in the rate of increase of the different sections of society leads naturally to the question. Have higher social classes an innate superiority in body and mind over the lower ones? This is a question obviously difficult to answer, and very little in the way of facts was brought forward to confine or direct the interchange of opinions which it aroused. Three papers dealt with it to some extent. They were read respectively by Professor Loria,[1] Professor Niceforo,[2] and Professor Michels.[3]

Professor Loria affirms "the absolute independence of superiority of income and superiority of intellect," and brings forward some arguments intended to support this view. In reality they support a very different contention: namely, that the possession of a large income is not in itself a proof of superior intelligence. He cannot seriously insist that intellectual capacity does not frequently enable men to rise to an economic condition superior to that of the majority of those who started equal with them, or that the skilled mechanic is not on the whole mentally superior to the pauper. Yet unless he does so he must admit that the absolute independence which he affirms does not in reality exist.

Professor Niceforo's contribution forms an interesting contrast in that his conclusions are so entirely antagonistic to those of Professor Loria. Professor Niceforo has collected a large quantity of data in order to determine what differences, if any, exist between the upper and the lower social classes, with regard to their physical and mental powers. This evidence is not contained in the paper, but its nature is indicated, and references are given to his many publications in which it is fully set forth. The conclusions drawn from it are as follows:

[1] Elite Fisio-Psychica ed Elite Economica. Achille Loria. Il Professore de Economica Politica, Università di Torino.

[2] La Cause de l'infériorité de Charactères psycho-physiologiques des classes inférieurs. Par Alfredo Niceforo, Professor at the University of Naples.

[3] Eugenics in Party Organization, by Roberto Michels, Professor of Political Economy, University of Turin.

Individuals of the lower classes have, relatively to the members of the higher classes, poorer physical development, smaller cranial circumference, a lower degree of acuteness of sensation (as determined by the instruments used in experimental psychology), and of resistance to mental fatigue, a delay in the epoch when puberty manifests itself, a slowness of growth, a larger number of anomalies and cases of arrested development. Speaking generally, if men were grouped according to a scale of mental and physical development, the lower social classes would, on the whole, come near the lower end of the scale.

While fully admitting that the unfavourable environment caused by poverty is one of the factors tending to bring about this result, Professor Niceforo considers that it is essentially due to the selective agency of inborn differences.

"Men who are born with physiological and mental characters of an inferior order tend to sink into the inferior classes or tend to remain at low level if born there. Vice versâ, men who are born owning superior characters tend to rise or to remain in the high economic, social and intellectual positions which they already occupy."

In support of Professor Niceforo's view thus summarized may be quoted the opinion of Professor Michels, who showed that in one profession at any rate, namely, in politics, men on the whole more able and energetic than their fellows, and superior to them physically and mentally, were enabled by party organisation to rise from the ranks.

(c) The Eugenic Bearing of the Limitation of Families.

Dr. Ploetz[1] examines the relations between Neo-Malthusianism and Race Hygiene. The limitation of families below the physiological capacity of the mother may exert an influence on the race by altering the nature or quality of the families which it affects. But if it has no such action it may still work selectively in a variety of ways which will be considered later.

[1] Neo-Malthusianism and Race Hygiene, by Dr. Alfred Ploetz, President of the International Society for Race Hygiene, Germany.

The advocates of Neo-Malthusianism point to the fact that the mortality rate is higher among the later born than among the elder born children in a family, and argue from that the former are inferior in vitality to the latter. The evidence on this point is rather conflicting. In the poorer classes the death rate among the children rises steadily from the fourth child onwards as shown by Geissler's figures. Among the well-to-do families investigated by Ansell, there does not appear to be any difference in the mortality of the first six children, while Dr. Ploetz himself, working with Royal families, finds that all children up to the ninth have the same chance of survival. It appears, probably, that among the poorer classes, when the family is large the conditions are less favourable, and there is thus a higher death rate among the later born children which need not be due to their lower vitality. On the other hand in Royal families all the children are so well cared for that even the weakly ones have a very good chance of survival. In opposition to the view that the earlier born children are superior to those born later we have the observations of Pearson and Heron who found that among the tuberculous, insane and criminals the percentage of first and second born children was considerably in excess of the expectation. Dr. Ploetz brings forward certain criticisms of these figures, and concludes "that we have not as yet sufficient scientific material to attack malthusianism from the standpoint of the deterioration of offspring, in consequence of the increase in the percentage of the first two or three births."

In one respect, at any rate, it has a favourable influence, for by increasing the intervals between successive births it decreases infant mortality.

Malthusianism may have a selective action, firstly by affecting to a different extent families, differing in physical and intellectual value, in the same stratum of society; secondly by being practised to a different extent by different social strata; thirdly by affecting some races more than others. Its possible effects under the first head are carefully and suggestively considered by Dr. Ploetz, but he is unable to arrive at any very definite conclusion either for or against it. With regard to the

second point malthusianism is practised more by the higher social classes than by the lower, and as the former are superior, at any rate intellectually, it is harmful to the race.

Thirdly, malthusianism puts the Nordic or Germanic races at a disadvantage in respect to the Poles, Hungarians and Russians, and is likely to handicap the white in favour of the yellow races.

The lesson which Dr. Ploetz wishes to teach is contained in the following words:—

"If we look on all its effects we must conclude that to-day the spreading unregulated and misdirected malthusianism has a harmful effect from the standpoint of race hygiene." "To-day it is necessary, firstly, to combat the propaganda of Neo-Malthusianism. It is making its own progress only too rapidly without assistance.

"On the positive side, race hygiene must strive, especially through the work of our artists—our dramatists, novelists, and painters—to renew in our young men and women the ambition for the advancement, the perpetuity and the increase of their family. But we must go still further, for the narrow interest of the family is, perhaps, not so much harmed by a mitigated malthusianism. We must instil in our children greater courage to undertake the responsibilities of life, a higher patriotism, a sense of devotion to our race which must face these great combats, so that they gladly prepare for an expenditure of energy beyond their own immediate and personal interest."

(d) The Practice of Midwifery.

Dr. Agnes Bluhm's[1] paper is a discussion of the facts bearing on the dictum of Dr. Wilhelm Schallmayer, "The more successfully obstetrics develops, the more necessary will it become for future generations."

She first examines the conditions which prevent normal and easy child birth, in order to discover to what extent they are due to hereditary defects. The two principal factors are the condition of the muscles of the uterus and the shape of the

[1] Rassenhygiene und Ärtzliche Geburtshilfe, Dr. Agnes Bluhm, Berlin, Gross Lichterfelde.

pelvis. Circumstances independent of heredity may adversely influence both, thus a sedentary life leads to poor development of the uterine muscles, while much standing from an early age may lead to the condition known as "flat pelvis." But heretary predisposition, far more than the manner of life, produces malformation either directly or through the agency of rickets. More than half the total number of deformities are due to this disease, the tendency to which is undoubtedly inherited.

A priori considerations would thus lead one to believe in the dysgenic influence of obstetrics, and the statistical facts brought forward by the author tend to confirm this view. These show that in Hamburg the proportion of operations to the whole number of confinements has been rising since the period 1885-1889; that in spite of advances in operative technique the death rate among the mothers operated on has increased; and that although the death rate among children born with operative aid has diminished, it has steadily risen in relation to the total number of births.

Other statistics collected in the Grand Duchy of Baden, of a slightly different nature, lead to a similar conclusion, though not in so clear and definite a way.

In seeking an answer to the question "How can we prevent obstetrics from bringing injury to the race constantly, and in ever-increasing degree?" Dr. Bluhm does not suggest that we should ever set a barrier to the further spread of the art, but firstly as a counsel of perfection "that women who are unfitted for bearing should, from the very beginning, renounce the idea of descendants." Secondly, that the obstetrician should approach his task in a eugenic spirit, or in other words that the aim of his operations should be rather more than at present to save the life of the mother and rather less to bring living children into the world.

(e) War and the Preparations for War.

Professor Kellogg's paper[1] deals with the effects both of war and of military service in time of peace. The dysgenic action of war arises principally from the fact that the men of

[1] Eugenics and Militarism, by V. L.Kellogg, Protessor in Stanford University, California.

whom the conflicting armies are composed are selected as passing a certain standard of physical efficiency. Thus in France and Germany from 30-50 per cent. of all those liable to conscription are rejected as unfit for service because of undersize, infirmities or disease, and in England 40 per cent. of those wishing to enlist are not admitted. Professor Kellogg brings forward figures to show how large a proportion of men thus selected may be killed in time of war by wounds in battle, by exposure and by diseases in camp or garrison. He has also collected a certain amount of direct evidence indicating the ill-effects of war in the average stature and vigour of the nations engaged.

In peace time military service, according to Professor Kellogg's view, is dysgenic because it leads to the spread of disease, particularly venereal disease. In 1910, in the British Army, one-fifth of the military hospital admissions were due to syphilis, and the proportion in the United States is about double. It is impossible to compare these figures, and others brought forward, with corresponding ones for the civil population, because there are none. But in the year 1910 in every 10,000 of the men who offered themselves for enlistment in the British Army, one and a half[1] were rejected for syphilis, while during the same period 230 per 10,000 of those actually in the Army were admitted to hospital for it.

In the discussion which followed this paper General von Bardeleben and Colonel Melville both contended that military service was not necessarily unhygienic. The more seriously the Army is taken and the better its discipline, the healthier will be the conditions of service. In Germany military service far from leading to the spread of venereal disease actually diminishes it.

III. Environmental Causes which, Acting on the Parents, may Influence the Nature of the Offspring.

(a) *Parental Age and Season of Conception.*

Dr. Marro[2] endeavours to prove two quite distinct theses: firstly, that among the children of particularly youthful or

[1] According to Colonel Melville this number should be 14.

[2] Influence de l'age des Parents sur les Caractéres Psycho-physique des Enfants par Prof. Antonio Marro.

particularly aged parents may be found an exceptional proportion of criminals and lunatics. This he suggests may be due on the one hand to immaturity and on the other to senility, which brings about changes in the conditions of the body of a similar nature to those produced by an intoxication or poisoning. Secondly, that criminals born of particularly young parents tend to show in the nature of the crimes which they commit the psychical traits characteristic of youth, or, if they have sprung from aged parents, of old age. Further, that among normal school children a phenomenon of an essentially similar nature may be observed in the records of their conduct at school.

The statistical material which forms the basis of Dr. Marro's work is far too small to form a sure foundation for his theory. It consists of records of 456 criminals and 100 lunatics, and for purposes of comparison 1,765 normal individuals (771 new born babies, 917 school children, and 77 adults). All these individuals were divided into three classes according to the age of the parents at the time of their birth, parents up to the age of 25 being described as immature, between 26 and 40 as completely mature, and of 41 and onwards as decadent. It was then found that among the normal group 8·8 per cent. of the fathers were immature, among the criminals 10·9 per cent., and among the insane 17 per cent. Among the normal group 24·9 per cent. of the fathers were decadent, among the criminals 32 per cent., and among the insane 36 per cent. This is practically all the evidence brought forward in support of the first thesis; it may be as well to examine it before passing on to the second. Firstly, it must be noted that almost all the members of the normal group were born quite recently, being either new-born infants or school children. The criminals, on the other hand, must have been born a considerable number of years ago, though we are not told exactly how long. The lunatics were those admitted to the Manicome of Turin in the year 1886, and as they were probably for the most part adults at the time they must have been born in the 50's and early 60's, if not earlier. Now since the more or less general decline in the size of families which has taken place in recent years must induce a tendency for the births of children to be concentrated at a

particular time in the lives of the parents, one would expect to find among people who have been born 30 or 40 or more years ago a greater proportion with very young or with aged parents than among those born quite recently. Secondly, if both the abnormal and the normal groups had been born during the same period, it would be necessary, in order to make a valid comparison between them, to take into account the different social classes from which they were derived, since it is well known that marriage customs differ considerably from class to class, and affect the age of parents at the time of procreation, also that the size of the family varies from class to class, and is supposed to be particularly high in those classes from which the majority of criminals spring.

In order to establish the second thesis the criminals are divided into sub-classes according to the nature of the crime, and for each sub-class the proportion of parents in each of the three age groups is given. The author's conclusions can, however, have no weight attached to them for the two following reasons. Firstly, the members in the sub-classes are much too small, and secondly, it is quite impossible to say, unless one knows all the circumstances, whether a crime shows the impetuousness and lack of self-control characteristic of youth, or the absence of affective feelings and the suspicious, calculating and avaricious temperament, attributed by Dr. Marro to old age. One cannot avoid the suspicion that he has made his own decision on these points with regard to each crime, after ascertaining the age distribution of the parents of the particular group of criminals in his collection who had been found guilty of it.

The small differences shown in the proportions of young, mature, or aged parents among the good, mediocre, or positively naughty children, cannot be accepted as showing any association between the conduct at school of a child and the age of its parents. If there were no other objections, the fact that quite different results are obtained from the consideration of the fathers to those shown by the mothers would entirely destroy one's confidence in Dr. Marro's theory.

A paper of a very different stamp is that of Professor Gini,[1] who starts from the fact that the best available statistics show that the percentage of horses born who reach maturity is much greater than the corresponding percentage of human beings, even in the best cared for section of society. This, he suggests, may be due to eugenic measures taken in the breeding and rearing of the domestic horse, or it may be a feature common to the higher animals whether wild or domesticated. He then points out that the higher animals in the wild state differ from man, with regard to breeding habits, in three principal ways. Firstly, they have a special breeding season at one period of the year. Secondly, they start the process of reproduction as soon as they are physiologically ready for it. Thirdly, the weak and diseased are weeded out by natural selection before they reach sexual maturity.

The first point of difference suggests the questions. Is there any evidence that there remains in man a period of "heat" during which conceptions occur most frequently? Are the children who are born from conceptions which take place during this period, if indeed it exists, or at any other special season in the year, endowed with greater vitality than the rest?

From the consideration of large numbers of carefully prepared comparative tables Professor Gini answers the first question in the negative. A tendency for conceptions to be concentrated at a particular period in the year does in reality exist, but the difference in the incidence of this period in different countries appears to show that it can be attributed more probably to factors other than the survival of a period of heat, such as climate, religious customs, fasts and feasts, and to fashions in the months for marriage.

The answer to the second question is that the season of conception does not directly influence the vitality of the child, but the time of birth does, since among those born in temperate seasons there is a lower rate for still-births and a greater length of life. An elaborate statistical investigation shows that the size and weight of a child is not affected by the age of its

[1] Contributi Demografici ai Problemi dell' Eugenica. Dott. Corrado Gini, Professore di Statistica nella R. Universitá di Cagliari.

mother at its birth, but that its vitality tends to be lower the older the mother was at marriage. With the increasing age of the mother the number of still-births and miscarriages increases also.

It is also shown that among lunatics, consumptives, and suicides the number of children born is less and their mortality is higher, and confirmation is given to the already ascertained facts that the number of offspring is correlated with the longevity of the parents and that longevity is inherited.

(b) Parental Alcoholism.

Drs. Magnan and Fillassier[1] have concerned themselves less with the eugenic than with the clinical aspect of alcoholism. The only evidence offered as to its effect on the offspring are the statistics compiled by Bourneville. These are cited in a somewhat incomplete manner, namely, that Bourneville found among 3,271 children on his list 1,156 cases in which the father was an excessive drinker, and 100 cases in which the excess was on the part of the mother; as nothing is said about the nature of the children it is difficult to see what this statement proves.

Some vivid sketches of the symptoms shown by degenerates follow, but no particulars concerning their parentage are given, except that we are told that they "result from such unions" (of parents given to alcoholism). The only specific fact as to parentage cited is that in one of the type cases the mother was insane.

IV. The Contributions of History and Anthropology.

(a) Anthropology.

Among the anthropological contributions are those of Professor Sergi[2] and Dr. Soren Hansen.[3] The former maintains that the two chief types of skull formation recognized by

[1] Alcoolisme et Dégénéscence. Statistiques du Service Central d'admission des Aliénés de la ville du Paris, et du départment de la Seine de 1867 à 1912.
M. Magnan, Médécin en Chef du Service Central d'Admission à l'Asile Ste Anne, membre de l'Académie de Médécine et M. Fillassier, Membre de la Societé Clinique de Médecine Mentale, et de la Societé de Médecine de Paris.

[2] Variazione e Eredità nell'Uomo. Professor G. Sergi, Professor of Anthropology, University of Rome.

[3] On the Increase of Stature in certain European Populations. By Soren Hansen M.D., Director of the Danish Anthropological Survey, Copenhagen.

him, the brachymorphic and the dolichomorphic, have persisted unchanged from the earliest times. They are not blended by crossing, but separate out in a mendelian manner. The mesocephalic skulls of craniometry are not in reality intermediate forms but belong for the most part to the dolichomorphic type. There is no evidence of the transformation of one type into the other. He criticizes the statistics of Boas, which purport to show that the cranial and facial types of many immigrants into the United States change rapidly in their descendants.

Dr. Soren Hansen examines the evidence as to changes of stature in various European populations during the last century. The records which leave a good deal to be desired in the way of completeness show on the whole a fairly definite increase in most cases. Thus the Danish Anthropological Committee, of which Dr. Hansen is the president, find that the average height of the fully grown Dane has undergone a regular and steady increase, as shown in the following table:—

1852-1856	...	...	165·42 cm.
1879-1888	...	...	167·78 cm.
1891-1900	...	...	168·43 cm.
1904-1905	...	...	169·11 cm.

Similarly the conscription lists of Norway and Sweden show an increase of about two centimetres from the middle of the last century. The average stature of the Dutch has increased from 165·5 cm. in 1866 to 167 in 1883 and 168 in 1899. The changes shown by these figures are not part of a steady secular increase in stature, for "measurements of skeletons from prehistoric times have sufficiently proved that the stature has not changed sensibly in the last two thousand years or more, although it may have oscillated periodically about a mean somewhat different in the various countries." It is within the scope of the science of eugenics to determine what are the causes of these fluctuations. The recent increase is attributed to improved hygienic and economic conditions, but the question is complicated by the action of a great many other factors, as, for instance, the relative increase or decrease of one or other of the

many racial elements making up a population, the migration to the towns of the best portions of the rural communities, and the rapidly falling death rate. In this connection the contention brought forward by Professor Kellogg may also be referred to, namely, that great wars exercise a selective action tending to diminish the stature and deteriorate the physique of the nations engaged.

To throw clear light on these problems, a vast quantity of reliable data is required, and to obtain this Dr. Hansen insists on the necessity of methodical anthropometric surveys, established and conducted by Governments.

(*b*) *History.*

Dr. Woods[1] in his paper, "Some Inter-relations between Eugenics and Historical Research," attempts to meet one of the commonest objections which is urged against Eugenics, namely, that there is no proof that mental characters are inherited. People who hold this view are quite ready to admit that among the near relations of men eminent or successful in some particular walk of life may be found an unusually high proportion of other persons distinguished above the average, but they assert, with some reason, that this may be due to environmental causes, to opportunities arising from family influence, to the stimulus of example, to encouragement, to wealth, and to many other factors of a somewhat similar nature. Dr. Woods answers, if environment is so all powerful in moulding the mental pattern, why are such strong contrasts shown between persons reared in more or less similar environments? These contrasts must be due to inborn qualities. For example: "There is no reasonable cause why Frederick the Great was so different from his week-kneed and almost forgotten ancestor, George William of Brandenburg, except inborn determiners—something in the protoplasm, or, shall we say, something in the chromosomes." History shows also that the greatest differences have been shown by reigning sovereigns in their moral natures as well as in their mental powers, and as little in the one case as in the other can a satis-

[1] Some Inter-relations between Eugenics and Historical Research. By F. A. Woods, Harvard Medical School.

factory explanation be found in environmental differences. On the other hand, where differences in opportunity can actually be shown, as, for instance, in the case of actual reigning sovereigns and their younger brothers, there are no corresponding differences in achievement or in eminence.

An argument drawn from evidence of quite a different kind is also used to show that nature is of more importance than nurture. It may be briefly summarised as follows: If distinction is due more to family influence than to inherited ability, one would expect to find that in a country like America, where family influence is at its minimum, there would be less concentration of distinction in particular families than in Europe. If, however, the reverse is the case and inherited ability is the preponderant factor, no such difference should be found. The elaborate study of pedigrees which Dr. Woods has made shows there is in point of fact no difference in this respect between Europe and America. Hence if the premises are sound, the conclusion follows not only that there is such a thing as inherited ability, but that it is the dominant factor in the production of distinguished families. Some other interesting lessons are drawn by Dr. Woods from his historical studies of royal families; for instance, it is gratifying to learn that a certain amount of eugenic selection goes on among them. The later kings are on the whole better than the earlier ones, the proportion of bad ones among them being smallest. This is due to the fact that the worst types have left fewest adult descendants, "probably because of strong and wide-reaching correlations between normal health and all that passes under the term morality." At the same time on account of the correlation between morality and intellect, the average of the latter quality has also been raised.

Another point to which attention may be drawn, particularly as it was illustrated by a series of portraits in the Exhibition, is the change in facial type which has been going on. Since the beginning of the sixteenth century, when for the first time the portraits bear the hall-mark of truth, the resemblance to the mongolian type shown by the English, French, Flemish, and German nobility, but not by the Italian, has been gradually dis-

appearing, "the eyes are now closer together and more set in under the supraorbital arch; the upper part of the nose has become more slender, and the cheek bones less prominent."

The point of view of Mr. and Mrs. Whetham,[1] in approaching the problems of Eugenics from the historical side, is very different to that of Dr. Woods. While the latter says that all the evidence of history points to the "power and importance of a very few great personalities" in bringing about political and economic changes, the former attribute the rise and decline of nations to the relative increase or decrease of their racial constituents. Their paper is an examination of certain outstanding features of the history of Europe in the light of this theory. The population of Europe during historical times has been made up principally of three races: (1) Mediterranean; (2) Alpine; (3) Northern; and the diverse nations which exist now or have existed were all composed of these three elements in different and ever-changing proportions.

The Mediterranean race is "short of stature, dark of complexion and hair, long skulled, vivacious, gregarious, and one may perhaps add at once restless and easy going." It may be recognised now in a fairly pure condition in Ireland, Wales, Cornwall, and parts of the West of Scotland.

The Alpine or Armenoid race is of medium stature, medium colouring, and has a round skull.

The Northern race is tall and long skulled, and in its pure condition blue-eyed and fair-headed. It is vigorous, loyal, determined, and persevering, and it loves adventure. It may be found in its greatest purity in the Scandinavian peninsular and around the Dutch and English shores of the North Sea.

"It is suggested that the supreme power of Greece and Rome, each in its own direction, was due to the attainment of a fortunate balance between the social and political functions of the constituents of the nation, the directing power being supplied chiefly by the invaders of Northern races, who formed the dominant class among the Southern indigenous Mediterranean population. In each case the Northern elements grew gradually less, through such agencies as losses in war, the selective action

[1] The Influence of Race on History, by W. C. D. and C. D. Whetham.

of a differential birth rate, and by racial merging into the more numerous Southern stock.

The outburst of artistic genius and intellectual pre-eminence which marked the renaissance in North Italy may perhaps be due to a similar racial composition, the Northern elements being supplied by the descendants of the barbarian invaders of the later Roman Empire.

Great Britain has also similar racial elements. The Mediterranean race, spreading up the shores of the Atlantic, entered largely into the composition of the people of the South-West. The Northern element, immigrant from the shores of the Baltic and the North Sea, is strongest in the East and North.

We know that there are now at work two influences affecting the average racial character of the English nation: (1) The increase in the urban population at the expense of the rural; (2) the voluntary restriction of the birth rate which affects certain sections of all classes more than others.

It is probable that both these changes tend to favour selectively the Southern racial elements at the expense of the Northern. Eventually the present structure of society may become unstable in consequence of this racial alteration, and the necessary readjustment, in its turn, will contribute a chapter to history."

V. The Application of Social Control.

(a) *Legislation.*

Among the practical measures available for the prevention of procreation among these classes who form a burden on the community, sterilization has many advocates. Provided that it imposes no very serious risk or hardship on the person sterilized, it may be, even for them, a very desirable alternative to permanent confinement. Since operations have been decided which, it is claimed, fulfil the necessary conditions, it is of extreme importance to collect evidence as to their actual effect on the individual and as to the practicability of enforcing or encouraging them in suitable cases by legislative action. Such evidence seems unattainable in the older countries, but in America, where the existence of separate legislatures for each

State facilitates the introduction of experimental laws, where the temper of the people is bolder, and sentimentality is less rampant, opportunities may be found for discussing on a basis of facts topics which here are only a battlefield for conflicting prejudices, and opinions formed out of nothing by obscure mental processes. Special thanks are therefore due to the Committee of the Eugenic Section of the American Breeders' Association for communicating, through their Chairman (Mr. Bleecker Van Wagenen), their preliminary report[1] on the "best practical means for cutting off the defective germ-plasm in the human population." In spite of his express denial, Mr. van Wagenen was represented by certain sections of the daily Press as advocating the legislation with which he dealt, it would therefore seem necessary to point out that the phrase quoted is not intended as a description of such legislation, but as a definition of the objects for which the committee was appointed.

In eight States of the Union there are laws authorizing or requiring sterilization of certain classes of defectives and degenerates, but the question as to whether these laws are constitutional has prevented their being seriously carried into effect anywhere but in Indiana and California.

In Indiana, which led the way in 1907, any inmate of a "State institution, deemed by a commission of three surgeons to be unimprovable mentally or physically and unfit for procreation, may be selected and compulsorily sterilized by any type of operation chosen by the commission." The motive of the State in this enactment is purely Eugenic.

In California the law was introduced in 1909. The persons subject are the "inmates of State hospitals and homes for the feeble-minded, and inmates of State prisons committed for life, or showing sexual or moral perversion, or twice committed for sexual offences, or three times for other crimes." Those operated on are selected from this class on the recommendation of the superintendent or resident physician to a board consisting of

[1] Preliminary Report of the Committee of the Eugenics Section of the American Breeders' Association to study and to report on the best practical means for cutting off the defective Germ-plasm in the human population, by Bleecker van Wagenen, Chairman of the Committee.

himself and three general superintendents and the secretary to the State Board of Health. The motive of the State is the physical, mental, and moral benefit of the subject himself.

In Indiana the law was only enforced for two years, 1907 and 1908. During that period 125 men were compulsorily vasectomized at the Jeffersonville Reformatory. Investigations were set on foot by the committee into the pedigrees of some of these in order to ascertain the probable eugenic value of the operations, and they feel justified in reporting favourably on them.

In California 220 persons have been operated on, of whom 94 were women. They seem to have been taken exclusively from the State hospitals for the insane. Compulsory powers were rarely enforced, as it was decided in all cases to obtain beforehand the consent either of the relatives or of the patient, if sound enough mentally to form a reasonable judgment.

Besides the operations recorded above as having been performed under legal authority, a considerable number have been carried out on persons who have undergone them voluntarily, so that there are now available a considerable number of records of their effects on the subject. From a study of these the committee have arrived tentatively at the following conclusions, among others:—

"(1) That the sterilization of the adult male by vasectomy is a simple, practicable method of preventing procreation by him, without otherwise interfering with his sexual functions, but that it is not certainly permanent in this respect.

"(2) That sterilization of the adult female . . . . is never wholly free from danger to life or disturbance of other bodily and mental functions. Modern surgery and hospital care have greatly reduced these dangers, but they still exist.

"(3) That sterilization of adults by any of these processes does not appear greatly to modify previous sex characteristics and habits. In females sexual passion is sometimes increased. In males more often somewhat mitigated."

With regard to the effect on health and habits of the operation of vasectomy, the Committee obtained a good deal of conflicting evidence. Those who had undergone the operation voluntarily claimed to have derived considerable benefit from it,

while those compulsorily operated on seemed less inclined to speak in its favour.

It is worth while to note that, although these laws have been passed in many States and are contemplated in many others, they have not been enacted as a result of any general public demand for them, but owing to the efforts of a few enthusiasts. It is partly for this reason that they have been so little enforced.

Dr. Davenport[1] discusses the biological basis for and practical usefulness of certain laws imposing limitations on marriage. These he divides into three classes, the first dealing with the degree of kinship of the parties. "In practically all States of the Union marriage of brother and sister of parent and child, even of grandparent and grandchild, is forbidden. . . . . In most States marriage of uncle or neice, or of aunt and nephew, is forbidden." Such laws he regards as the crystalization of experience of the evil results of incestuous matings, and he gives examples to prove the point.

About a third of the States forbid the marriage of cousins. This prohibition is on the whole biologically justifiable, although such marriages are probably harmless if the stock is perfectly sound on both sides, but if a defect is present, whether latent or patent in either party, it is likely to be present also in the other, and thus to be transmitted to some, at any rate, of the children. Dr. Davenport is of opinion that the prohibition should be qualified as follows:—

"The marriage of cousins is forbidden when in the parental fraternity which is common to both there is a case of inability to learn at school, of dementia praecox or manic depressive insanity in any of their forms, of epilepsy, of congenital deafness, of albinism, or of cleft palate."

A law against the marriage of cousins would probably be difficult to enforce at first, but would be useful in educating public opinion as to the dangers of such marriages. The prohibition of the marriage of physically or mentally defective persons for eugenic purposes has not apparently been introduced in any State, though many provide, on legal grounds,

[1] Marriage Laws and Customs, by Dr. C. B. Davenport, Director of the Eugenics Record Office, Cold Spring Harbour, Long Island, N.Y.

that if either party is an idiot or insane the marriage is void, while the marriage of paupers is restricted in some States for the reason that a male pauper cannot support a wife. Dr. Davenport does not advocate legislation of this kind, but has something to say in favour of extending the system of certificates, which some clergymen now require in order to avoid solemnizing the marriages of persons suffering from venereal disease. Many States have laws rendering void marriages between white persons and negros, or descendants of negros in certain specified degrees, or sometimes Chinese or Kanakas. These laws are intended to prevent the evil results which may reasonably be expected to arise from crosses of these races, but they fail lamentably in preventing such crosses. With regard to them Professor Davenport gives the following advice: "Forget unessentials, like skin colour, and focus attention on socially important defects. Then, by sterilization or segregation, prevent the reproduction of the socially inadequate."

(*b*) *Education.*

The education of public opinion is a necessary foundation for any definite legislative action, and is in itself likely to lead to the spread of eugenic habits. To the medical profession the public turns for instruction and advice in matters of this kind, it is therefore of the greatest importance that Eugenics should be included in the medical curriculum. The object of Mr. H. E. Jordan's[1] paper is to insist on this point.

Dr. Schiller[2] deals with the education of the middle and upper classes in England. The educational system "is remarkable for the comparatively slight emphasis it lays on intellectual education. It seems to have despaired altogether of utilizing for educational purposes the alleged desire for knowledge for its own sake, the universality of which Aristotle could assume as a truism in the Greek world. Not that it is utilitarian, and offers much that the youthful mind can recognise as useful knowledge. On the contrary, the staple subjects

[1] The Place of Eugenics in the Medical Curriculum. By H. E. Jordan, Chairman of the Eugenics Section of the American Association for the Study and Prevention of Infant Mortality.

[2] Practical Eugenics in Education, by F. C. S. Schiller, M.A., D.Sc.

of a 'liberal' education seems so 'useless' that it is thought that only the well-to-do can afford to study them; their real use is to serve a caste-mark or class distinction. But they evince their liberality in another way; they are *liberally endowed.* Care is taken that it shall pay a clever boy exceedingly well to study them."

The scholarship system in which the liberal endowment evinces itself is of distinct eugenic value for the following reason: it is characteristic of our social system that the pecuniary rewards for successful professional work, though adequate, are given rather late in the lives of those who earn them. Thus, at the time in a man's life when his children are being born success is usually not yet assured and his income is comparatively low. Yet under the existing system, if he is a man of ability, his children will have a reasonable chance of obtaining scholarships, and the feeling that this is the case will militate against some of the prudential reasons for restricting the size of the family.

The Athletic Branch of British education has a moral and also a eugenic value in that it sets up an ideal of fitness, which acts as an incentive to self-improvement. Its value could be greatly enhanced by intellectualizing and spiritualizing this ideal.

It cannot be claimed that the foregoing account of Dr. Schiller's paper is at all adequate, as only the points dealing more immediately and directly with eugenics have been referred to.

(c) *Inspection.*

Dr. Querton[1] pleads for the systematic inspection of children. He sees in this a necessary corollary to free and compulsory education in order to ensure its profitable application. Some sort of examination, physical and mental, should be imposed at the commencement of the school period to determine on what lines education should be conducted, and this should be repeated from time to time, as often as necessary, in order

[1] Rapport sur l'Organization Pratique de l'Action Eugenique, Dr. Louis Querton, Professeur à l'Université Libre de Bruxelles.

to ascertain the results of the education received, and to adapt it further to the needs of the individual child. This systematic observation should be extended on the one hand to children who have not yet reached the school age, and on the other to those who have left school and entered some trade or business. It should thus be continuous from the beginning to the end of their period of development.

Dr. Querton suggests a scheme for organising this system of methodical control. Eugenics committees should be established locally, consisting of persons who are led by their occupations to interest themselves specially in children. The local committees, each having for its sphere of action a town or part of a town, should be related by means of provincial or county associations, which themselves should be under the guidance of a national association.

The main object of the scheme is not the eugenic improvement of the stock, but the modification of the environment so as to adapt it to the needs of the individual during the sensitive period of growth, but eugenic aims would be furthered thereby. The eugenic committees "would collect the documents necessary to the scientific knowledge of the facts of heredity, and would supply precise information concerning the effective work of different social institutions on the transformation of the race."

Further, by inspections of the children it would often be possible to ascertain the dangers of the hereditary transmission of diseases and defects, and to put a stop to further births when the production of degenerates is certain. The spread of elementary notions of eugenics would also be facilitated.

(d) Prophylaxis of Syphilis.

Professor Hallopeau after referring to the dysgenic effects of hereditary syphilis points out that medicine makes a considerable contribution to eugenics if it succeeds in preventing it.

Preventive measures may be divided into three classes:

(1) Prophylaxis by the police, *i.e.*, measures taken by the State to prevent the propagation of the disease.

(2) Prophylaxis by persuasion. It must be pointed out to syphilitics that they have no right to become parents so long as they are liable to transmit the disease to their offspring.

(3) Medical prophylaxis, *i.e.*, the cure of the disease in the individual. The greater part of the paper is occupied with a discussion of the best treatment, and no account of this need be given here.

(*e*) *The Prevention of Alcoholism.*

Dr. Mjöen describes a scheme for the encouragement of temperance by the taxation of beers according to their alcoholic content. The paper also contains evidence of the dysgenic effect of alcohol. We regret that we have not been able to give an account of it, not having a copy of the paper available.