

writer is of opinion that it would be better to take a less comprehensive course than to omit "graphical methods" entirely.

The best method for mechanics, as for all physical sciences, is:—

(1) Experimental work to be carried out by the boys.

(2) Consideration of, discussion on, and deduction from the experimental data obtained by the boys, with an occasional demonstration by the teacher to clench any particular point. This treatment of the experimental work to involve both analytical and *graphical* methods.

In fact, a truly educational course in mechanics is impossible without experimental work. Granted this experimental work, the writer is of opinion that the aim of the students will be considerably improved, and not only so, but there will be a complete absence of wild "shots."

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EUGENICS; ITS DEFINITION, SCOPE AND AIMS.¹

EUGENICS is the science which deals with all influences that improve and develop the inborn qualities of a race. But what is meant by improvement? We must leave morals as far as possible out of the discussion on account of the almost hopeless difficulties they raise as to whether a character as a whole is good or bad. The essentials of eugenics may, however, be easily defined. All would agree that it was better to be healthy than sick, vigorous than weak, well fitted than ill fitted for their part in life. In short, that it was better to be good rather than bad specimens of their kind, whatever that kind might be. There are a vast number of conflicting ideals, of alternative characters, of incompatible civilisations, which are wanted to give fulness and interest to life. The aim of eugenics is to represent each class or sect by its best specimens, causing them to contribute *more* than their proportion to the next generation; that done, to leave them to work out their common civilisation in their own way.

The course of procedure that lies within the functions of a learned and active society would be somewhat as follows:—

(1) Dissemination of a knowledge of the laws of heredity so far as they are surely known, and promotion of their further study. Few seem to be aware how greatly the knowledge of what may be termed the *actuarial* side of heredity has advanced in recent years. The *average* closeness of kinship in each degree now admits of exact definition and of being treated mathematically, like birth- and death-rates, and the other topics with which actuaries are concerned.

(2) Historical inquiry into the rates with which the various classes of society (classified according to civic usefulness) have contributed to the population at various times, in ancient and modern nations. There is strong reason for believing that national rise and decline are closely connected with this influence.

(3) Systematic collection of facts showing the circumstances in which large and thriving families have most frequently originated; in other words, the *conditions* of eugenics, on which much more information is wanted than is now to be had. It would be no great burden to a society, including many members who had eugenics at heart, to initiate and to preserve a large collection of such records for the use of statistical students. The committee charged with the task would have to consider very carefully the form of their circular.

¹ Abridged from a note read before the Sociological Society on May 16 by Dr. Francis Galton, F.R.S.

and the persons entrusted to distribute it. They should ask only for as much useful information as could be easily, and would be readily, supplied by any member of the family appealed to. The point to be ascertained is the *status* of the two parents at the time of their marriage, whence its more or less eugenic character might have been predicted if the larger knowledge that we hope to obtain had then existed. The reasons would have to be shown why the children deserved, to be entitled a "thriving" family. A manuscript collection such as this might hereafter develop into a "golden book" of thriving families. The act of systematically collecting records of thriving families would have the further advantage of familiarising the public with the fact that eugenics had at length become a subject of serious scientific study by an energetic society.

(4) Influences affecting marriage. The remarks of Lord Bacon in his essay on death may appropriately be quoted here. He says, with the view of minimising its terrors:—

"There is no passion in the mind of men so weak, but it mates and masters the fear of death. . . . Revenge triumphs over death; love slights it; honour aspireth to it; grief flyeth to it; fear pre-occupateth it."

Exactly the same kind of considerations apply to marriage. The passion of love seems so overpowering that it may be thought folly to try to direct its course. But plain facts do not confirm this view. Social influences of all kinds have immense power in the end, and they are very various. If unsuitable marriages from the eugenic point of view were banned socially, or even regarded with the unreasonable disfavour which some attach to cousin-marriages, very few would be made. The multitude of marriage restrictions that have proved prohibitive among uncivilised people would require a volume to describe.

(5) Persistence in setting forth the national importance of eugenics.

There are three stages to be passed through before eugenics can be widely practised. First, it must be made familiar as an academic question, until its exact importance has been understood and accepted as a fact. Secondly, it must be recognised as a subject the practical development of which is in near prospect, and requires serious consideration. Thirdly, it must be introduced into the national conscience, like a new religion. It has, indeed, strong claims to become an orthodox religious tenet of the future, for eugenics cooperate with the workings of nature by securing that humanity shall be represented by the fittest races. What nature does blindly, slowly and ruthlessly, man may do providently, quickly and kindly. As it lies within his power, so it becomes his duty to work in that direction, just as it is his duty to be charitable to those in misfortune. The improvement of our stock seems one of the highest objects that can be reasonably attempted. We are ignorant of the ultimate destinies of humanity, but feel perfectly sure that it is as noble a work to raise its level as it would be disgraceful to abase it. I see no impossibility in eugenics becoming a religious dogma among mankind, but its details must first be worked out sedulously in the study. Over-zeal leading to hasty action would do harm by holding out expectations of a near golden age which would certainly be falsified and cause the science to be discredited. The first and main point is to secure the general intellectual acceptance of eugenics as a hopeful and most important study. Then let its principles work into the heart of the nation, which will gradually give practical effect to them in ways that we may not wholly foresee.