

## **Draft of Rede Lecture**

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~~XL~~ 20





I now turn to the very opposite extreme of Anthropometry, <sup>what in its main features is</sup> that is to its simplest, best known, and longest established part.

I cannot explain what I mean, better than by reading the programme of an exhibit at ~~the International Health Exhibition~~ <sup>South Kensington</sup> which will be in working order in a few days. I suggested it to the Council, who willingly adopted the idea, and I gave <sup>have arranged</sup> ~~and arranged~~ the instruments, and the methods of using them. It is <sup>to be</sup> called the Anthropometric Laboratory, ~~to be worked in a self-supporting~~

where

~~base~~ where ~~and in which~~ a person may be measured in the following particulars

Eye sight, color sense, hearing, breathing capacity, Strength, swiftness of blow, Height, span of arms, weight.

It is to be worked on a self supporting basis, and it really seems ~~that~~ ~~it is~~ possible by judicious <sup>management</sup> ~~arrangements~~ to supply <sup>any person with</sup> all these facts on a card, and to keep a copy of them, for the very small sum of three pence.

(like these,

The value of ~~these~~ simple measurements) <sup>is that</sup> ~~lies in the facility with which~~ they show whether the physical development of the child or youth is proceeding normally. They draw attention <sup>at a glance</sup> to hidden faults in his rearing which

would detract from <sup>his</sup> ~~the~~ future efficiency as ~~of the~~ man, and which if detected early, have a better chance of being palliated or overcome. Have there not been hundreds of thousands of cases of eyesight <sup>needlessly</sup> injured beyond repair, of lopsided growth and stunted chest capacity, ~~among~~ which if manifested by ~~regular~~ measurement would have been surely attended to in time, and remedied. ?

The necessity of periodical measurement is thoroughly recognised by those who have studied the science of Health, but it has not yet obtained that hold of popular opinion which it deserves, and ~~which~~ <sup>it will</sup> at some future time undoubtedly attain.

America, in some of her colleges has instituted a system of physical measurements, and is turning them to good account, going further in this direction than the public


opinion

opinion in this country is probably prepared for. Thus in the Johns Hopkins university, a new department has been established, called that of Physical Education and Hygiene, and a notice was issued last January, which I quote from its University circular, that "matriculate students will hereafter be required, in order to secure the degree of Bachelor of Arts, to take the course in Physical Culture." I am indebted for much information on this subject to Dr Hartwell, who presides over that department. The students are not compulsorily measured but they present themselves of their own free will. They are bared of clothes and are so thoroughly examined that the schedule on which the results are entered, has some 50 separate headings, and corresponding blank spaces, all of which are filled up. Irregularities of muscular development are especially noted,

and

and the student is advised as to some special form of gymnastic exercise. At intervals, the measurements are repeated and the gain or loss in each particular is recorded. (I should add, that numbers and not names, are entered in the chief record for the sake of privacy) So far as I can judge from the numerous papers that have reached me, this elaborate system is very effective, is already popular and is growing in popularity. American experience shows how kindly students may take to a system even of minute measurement.

The rate





The rate of the annual increase of stature during youth, together with the records of weight, ~~serve as an~~ <sup>are</sup> easy tests of normal development. I will refer more especially to weight, because I happen recently to have had the opportunity of examining a series of <sup>weights of the same persons at different ages</sup> ~~age-weights~~, extending from early manhood to nearly the close of life. We are as yet so deficient in records of the weighings of the same individual during many successive years, that I believe I am almost the first person who has enjoyed such an opportunity. The particular series I speak of had an additional interest, from its including a large number of the best known men in English Society during the past hundred years. The history of the collection is a curious and instructive one, and as follows. In a well-known \_\_\_\_\_ and



and fashionably frequented shop in  
St James' Street, there hang <sup>large</sup> magnificent  
beam scales, one for the purpose of the  
shop and another fitted with an arm-  
-chair for the use of the customers. Also,  
on a shelf at this side stand a row  
of ledgers, well indexed, ready to receive entries.  
The opportunity of being weighed was usually irresistible  
to those who entered the shop.)

Statesmen, generals, diplomats, men  
of fashion, daily sat in the scales, and  
the results were duly booked, and the records  
still are there. I mention these details to  
show how little averse people are from being  
weighed and measured. On the contrary they  
like it. Nothing interests them more than  
particulars about themselves. The plainest people  
look at their own faces in the glass without  
displeasure.



The examination I made into the age-weights was confined to those of peers & some baronets, whose ages at the time of the weighings were easily found in the Peerage. — The

Results gave an excellent measure of the mischievous influence of the form of social life towards the end of the last century, when the phrase "as drunk as a lord" was in use, and <sup>too</sup> true as to fact. The oscillations in weight from year to year were more abrupt and large, then than now, and the times of life when men began to grow heavy and when they began to shrink were earlier than at present.

Anthropometric records are treated statistically to ~~learn~~ <sup>discover</sup> the efficiency of the nation as a whole, and in its various parts, and the direction

direction in which it is changing, whether for the better or worse. We are still unable to speak with even moderate precision about these things. The Anthropometric Committee of the British Association found great difficulty in collecting data, and their collection is sadly imperfect. There is great need for regular and systematic registration of physical measurements, in a form available for statistical ~~use~~ <sup>inquiry</sup>.

To show the use of preserving even the minor data, I will dwell for a moment on that of the colour of the hair and eyes, which might be thought at first sight to have no obvious bearing on the general efficiency of the nation.

This is far from being the case. The British nation is partly a blend, partly a mosaic of very different types. The short, black-haired, ancient British race



unites imperfectly with the tall, fair-haired Danish or Scandinavian. Their union resembles what ~~the~~<sup>druggists</sup> call an emulsion, that is a mixture of oil and water so well shaken up that they form <sup>at the time</sup> an apparently homogeneous compound; but the combination is not durable. Leave the emulsion alone and after a while it will ~~begin to~~ separate into its component elements. Types are stable, but the forms of their mongrel offspring are not, and whenever the external features of the old types reappear in something of their original purity, we may reasonably suppose that their inward characteristics are likely to be present also.

Whether it be as a race peculiarity or not, the color of the hair is related <sup>at least in America</sup> to certain immunities from, & susceptibilities to disease. This is shown by the

medical and other statistics published by the American War Office in 1875 under the direction of Dr. Baxter. at the time of the war of the rebellion <sup>there</sup>, all male citizens of the United States between the ages of 20 and 45, ~~years of age~~, were medically inspected with great minuteness, to ascertain how many ~~of them~~ were fit for military service. About one quarter of ~~them~~ were unfit, and the diseases that incapacitated them are recorded in Dr. Baxter's book, in connection with other particulars, including the color of the hair. An analysis of between three hundred and thirty & three hundred and forty thousand cases of invalidism showed that the proportion of the light haired men <sup>in America</sup> who were unfit for service was larger than that of the dark haired men. The light haired men

in America suffered the most from every form of disease except chronic rheumatism, which alone fixed itself in preference upon the dark-haired.

It ~~is obvious~~<sup>follows</sup> therefore that even the color of the hair is a proper subject for anthropometric record, and we may be feel assured that other obviously important personal data deserve measurement and registration.

These conditions ~~are~~<sup>are</sup> favorable to the expansion of the ~~Irish race~~<sup>dark-haired race</sup> in the United States

The value



The value of the simpler measurements being ~~so~~ indisputable, the ~~cost~~ <sup>cost</sup> of making them ~~so~~ <sup>so trifling</sup>, and the facility of ~~registering~~ <sup>registering</sup> them in any permanent institution being so obvious, it seems strange that they should be neglected at any school or university.

<sup>I am audacious enough</sup>  
I venture to suggest the establishment of at least a plain Anthropometric Laboratory here at Cambridge. I should consider it one of the best works of my life if the remarks I have the privilege of addressing publicly to this distinguished audience, were to lead to the introduction of a new requirement in the University, that

of a systematic but simple measurement of every undergraduate, on his matriculation and again before taking his degree. I believe that the introduction of so ~~simple~~ <sup>harmless & interesting</sup> a novelty would be in reality a very important ~~step~~ <sup>measure</sup>, not only <sup>in respect of</sup> its immediate object but ~~also~~ because the schools would gradually follow suit, and the growth and development of every member of the educated classes would be <sup>in the future</sup> systematically ~~watched~~ <sup>observed</sup>. Moreover each person

who had been at school and at the University would know where to collect data for his own life-history, whenever he desired to bring them together. It is not only a personal feeling that I am <sup>about to</sup> ~~express~~, but one that has been uttered quite as emphatically by not a few of



the most eminent members of the medical profession, that one of the great desiderata of the time is a habit of keeping continuous records of growth, health and disease. The step I ~~have~~ ~~advocated~~ ~~would be a~~ moves entirely in that direction. Each life may be

viewed as if it were a separate experiment, conducted on a system of trial and error, and costly in time, in effort and in pain. The cost of the experiment is wasted, if no accurate records are kept, whence the lesson it is able to teach, may thereafter be deciphered.

End





f. 32

Louder -  $\frac{g}{f}$  - Faster  
Lower                      Slower

