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Racial Prejudice.

PROF. FRANZ BOAS showed his usual courage in taking "Race and Progress" as the subject of his presidential address to the American Association for the Advancement of Science, at Pasadena on June 15 last. He essayed once more to raise the complex question of the intermingling of racial types from the slough of political controversy into which it has fallen in the United States and to discuss it dispassionately in the 'dry light' of scientific evidence.

Unfortunately, in this matter, science, or perhaps it would be more correct to say those who seek to interpret scientific data and apply their interpretations to practical affairs, speak with no united voice. Prof. Boas, looking on Europe with a cosmopolitan eye, views it as a whole, a congeries of peoples, each of no single fixed and determinate type, or able to lay claim to be regarded as a pure race—racial types, in fact, being largely ideal. Thus, he pointed out, it would be "a rash undertaking to determine the locality in which a person is born solely from the bodily characteristics". In the populations of the various parts of Europe many individuals might as well belong to one part of the continent as another. Yet, he goes on to argue, while it is not necessary to consider the great difference in type that occurs in a population as due to mixture of different types, it is easy to see that intermingling has played an important part in the history of modern populations. Further, there is no evidence that mating between individuals of different descent or different type results in progeny less vigorous than that of their ancestors. After dealing with the effects of heredity, environment, and selection upon bodily form, Prof. Boas surveyed the data of physiology and psychology from the racial aspects, and arrived at the final conclusion that the biological difference between races is small and that it is the social setting with which we have to reckon. Race antagonism is thus resolved into a matter of social group consciousness.

In this conclusion, Prof. Boas inevitably challenges comparison with the view taken by Sir Arthur Keith in his recent rectorial address in the University of Aberdeen. Sir Arthur, naturally preoccupied with the political and economic situation as it is in Europe to-day, and looking upon it as a phase in a long course of an evolutionary process, gives the fullest weight to the survival value of the concept of race. While he would agree with Prof. Boas that 'racial type' in its complete

implication is an ideal rather than an observed fact, he views 'racial prejudice' as a potent factor of progress in human affairs. Prof. Boas does not ignore the opposition in their respective views. Not only does he explicitly disagree with Sir Arthur Keith in his view of the beneficial effect of war, but he also traverses his dictum that "race antipathy and race prejudice Nature has implanted in you for her own end—the improvement of mankind through racial differentiation". Of this Prof. Boas says; "I challenge him to prove that racial antipathy is 'implanted by Nature' and not the effect of social causes which are active in every closed group".

In reality, Prof. Boas is by no means so far removed from Sir Arthur Keith's position as he would have us believe. In the practical problem Prof. Boas has specially in view, racial and social group tend to coincide. In Europe the lines of demarcation are geographical. In the United States the conflict is internal; the races are not segregated within national boundaries as they are, broadly speaking, in Europe. Sir Arthur Keith has expressed the view that every nation is a potential race. Hence the conflict that presents itself to Prof. Boas as calling for the consideration of anthropological science is both simpler and yet in some ways more difficult of solution than it is in Europe. He points out that the difference between racial groups is an important element in establishing racial grouping and in creating conflicts—there are no ethnic groups in Europe so widely diverse as negro and white; but the actual relation is identical whether the grouping be racial, national, or denominational. The group is idealised and there is an emotional desire for its perpetuation. This leads to group endogamy in the desire to keep the race or group pure.

Here it will be seen that Prof. Boas is virtually in agreement with Sir Arthur Keith, in so far as the latter would not exclude social factors from the influences which mould the potential race. This would seem to be the line upon which the negro problem is at present developing in the United States. However, regarding the situation as it stands, Prof. Boas' conclusion is that while society is stratified in social groups which are racial in character, there will be racial discrimination; but that wherever members of different races form a single social group with strong bonds, racial prejudice and racial antagonism will lose their importance and eventually disappear. Applying the terms of a general conclusion to a particular instance, Prof. Boas' address virtually sets out the argument for

the case that so long as the United States insists upon a social stratification in racial layers, the penalty must be paid in the form of a racial struggle.

In effect, then, Prof. Boas interprets the evidence of anthropological science as favouring the 'melting pot' view of population problems—that is, racial fusion, as against the conception of a dominant superior racial type, the theory which at present holds the political field. Although he might not admit it, on his view the United States might well qualify to be regarded as at a stage in Sir Arthur Keith's evolutionary process on its way to becoming a 'potential race'.

Symbiosis.

Tier und Pflanze in Symbiose. Von Paul Buchner. Zweite völlig umgearbeitete und erweiterte Auflage von "Tier und Pflanze in intrazellulärer Symbiose". Pp. xx+900. (Berlin: Gebrüder Borntraeger, 1930.) 96 gold marks.

THE growth of knowledge in this subject since the first edition of this work in 1921 is reflected in the present edition of 900 pages as compared with its predecessor's 462 pages. In an introduction of 18 pages the main branches of the subject are briefly surveyed. The oldest of these dates from the fifties of last century, when attention was directed by several observers to the presence of chlorophyll in infusoria, *Hydra*, Turbellaria, and the fresh-water sponge (*Spongilla*); but the green colour was regarded by some authorities as due to a special kind of 'animal chlorophyll' or to the minute plants taken into the respective animals from without and living as parasites or serving as food. When Hamann (1882) showed that the green bodies in the egg of *Chlorohydra* do not arise there but wander in from the parent, he established the transmission of symbionts, and further work demonstrated that the green bodies are complete cells. Other investigations showed that the yellow cells in the Radiolaria issue after the death of the animal and a flagellate stage ensues.

In a section of about 180 pages the author considers the cases in which symbiotic Algæ are concerned, beginning with the Protozoa and working systematically through the phyla up to the Tunicata. For each group of animals the history of our knowledge of the symbiosis is briefly surveyed, and the position occupied by the symbiont, the mode and course of infection of the animal and the resultant effects are described. In his comment on the published observations upon the relations between Algæ and corals, the author states