

come back some day and explore it. The address concluded with appreciative remarks regarding the social and recreative work of the institute, and especially with respect to the high place taken in gymnastics. The necessity for laying up for themselves a store of health and strength was strongly impressed upon the students, and the inestimable advantages of the social intercourse made possible by the existence of the various clubs and societies was insisted upon.

CERTAIN PHYSICAL CHARACTERS OF THE NEGROES OF THE CONGO FREE STATE AND NIGERIA.

IN a lecture at the Royal Anthropological Institute on November 29, Dr. Arthur Keith dealt with the physical characters and relationships of certain negro tribes in Equatorial Africa. His account was founded on data collected by (1) Mr. E. Torday amongst tribes in the Congo Free State, including the Bushonga, Basoka, Sango, and several others; (2) by Mr. P. A. Talbot in southern Nigeria, including the tribes of the Ekoi, Kabila, and Korawfs. Dr. Keith had also at his disposal three collections of crania, an extensive one of the Batatela (a tribe towards the eastern part of the Congo Free State), which was brought home by Mr. Torday; another from southern Nigeria, which he owed to Mr. P. A. Talbot; and a third (from the delta of the Niger) which had been placed at his disposal by Dr. Frank Corner.

In British Nigeria there are several types, but the one which he regarded as characteristic was represented by individuals of low stature, relatively long-headed, with the skull decidedly flattened from side to side. Many of the physical characters of this Nigerian type can be recognised in the Sango and other Congo tribes bordering on the Sudan. In head form, although not in stature, the Dinkas and Furs of the Nilotic tribes resemble the Nigerian type. In a contracted type which is prevalent in the Congo Free State, and which may be called the Congoese type, the head bulges laterally in the parietal region, and is relatively short and low.

The Batatela and the Basoka are representative of this type. It occurs also in some Nigerian tribes, and also in the Nyam-Nyam and Baran tribes of the Sudan. The Korawfs, a Nigerian tribe near the borders of the German Cameroons, are of a low stature with relatively long arms, as in Sir Harry Johnston's "forest negro type," but in head-form they resemble the Nigerian type of negro. The Bushonga from the south central part of the Congo Free State are tall compared with the Korawfs, but possess the massive head, great span, and large nose of the "forest type." In many features the Bushonga are related to certain of the Sudan tribes, such as the Nyam-Nyam. To account for the present distribution of physical characters among the negro tribes of Equatorial Africa one must assume that there has been a free intermigration of tribes, and that in their evolution the tendency in one tribe has been towards the accentuation of one set of features, in another tribe of another set of characters. Thus in the Nilotic Dinkas high stature and narrow-headedness have become marked characters; in typical Nigerians low stature and narrow heads; in the Basoka a wide, short head and low stature; in the Buruna a wide head and high stature. Interbreeding may have played a part in the determination of tribal characters; if it had played a great part we should have found a greater degree of physical uniformity. The extent to which an admixture of Arab blood has modified the physical characters of negro tribes has probably been exaggerated.

SCIENCE AND THE STATE.¹

IN all ages the welfare of a State must have been in a greater or less degree dependent on the development of its material resources and on the vigour and intelligence of its people; it is only in comparatively recent years, however, that recognition has been given to the fact that the State must leave nothing of this to chance, but must set itself deliberately by the use of scientific

¹ From the presidential address delivered before the South African Association for the Advancement of Science on October 31 by Dr. T. Muir, C.M.G., F.R.S.

method to make the very best of its resources, and to increase the available vigour and intelligence of everyone within its borders. Not only so, but it must take suitable precautions that intelligence be universally trained, and be also duly organised so as to give the most effective and productive result. It is no longer enough that the State shall merely welcome and applaud a discoverer when he arises, or merely safeguard a private inventor from being fleeced; on the contrary, it must give of its substance to foster both discovery and invention, and must give legislative help to secure that inventions when made shall not be unfruitful through want of skilled labour or other hampering cause.

If we ask the reason for this change, the answer is that the keenness of international competition has vastly increased, that this has led to serious searching of intellect, that the laws of evolution have in consequence been seen to be applicable to nations as well as to individuals, and that under these inexorable laws the very existence of a State may be imperilled by ignorance or neglect. It is thus more important than ever that statesmen and leaders of the people shall not only be men of probity and high general character, but men of wide knowledge and penetrating forethought. They must have studied and must know all the possibilities of both land and people. On the material side they must have reckoned up the mineral resources, the agricultural resources, the water power and other forms of potential energy, the harbour accommodation, the waterways, and the advantages of the geographical position for over-sea commerce. On the human side they must have noted the natural gifts and weaknesses of the people, the best means of developing the former and of correcting the latter; and if it should be that there are varieties of race and colour in the population they must have thought out plans, not only for preventing loss of power through internal friction, but for obtaining the close cooperation of all the races in the general national interest. In the future it is only in a relative sense that there will continue to be "hewers of wood and drawers of water"; the State that aims at being in the forefront will have to see that even its wood-hewing and its water-drawing are done intelligently and to the best advantage. Further, the exploitation of any race in the interest of a higher race will be fatal folly when the need exists for exploiting all races in the interests of the State.

These considerations make it readily appear that the first great duty of the State towards science is to provide an effective and comprehensive system of national education. In the lower stages of the system direct and formal instruction in science need not bulk very largely; what is essential is that the pupil shall throughout his course be trained to observe, to think, and to reason. In the middle stages—the stages covered by secondary schools of all classes—the actual study of science, and especially of scientific method, must form a larger and ever-increasing part of the curriculum. Under neither of these heads, however, need we enter into detail to-night; it is sufficient for our present purpose to insist in connection with both on the desirability (1) of fostering rather than repressing the natural curiosity of the young; (2) of constantly recurring to the study of things in supplement to that of words; (3) of training the hands in the use of appropriate tools other than the pen; (4) of gradually introducing research methods into class-room work. It is the neglect of this advice that has been a main cause in the retardation of science; it has also helped to make school life a byword for dullness, and in many cases made the after-life unintellectual and even trivial.

When we come to the higher stages—the stage of the university, and more practical institutions coordinate therewith—the interest in our subject naturally increases, for there we look, not only for instruction in science and training in scientific method, but for a steady flow of fresh contributions to the stock of human knowledge. That this last is a legitimate expectation is now the received opinion throughout the whole civilised world. In accepting it, too, we have but returned to the original conception of a university—a conception that in the course of a long period of years had gradually come to be forgotten in English-speaking countries. The evil results of