

The Advertiser

ADELAIDE: THURSDAY,
DECEMBER 16, 1926.

"ACQUIRED CHARACTERS."

The address at the Commemoration which closes the University year is always an important deliverance, alike from the intellectual status of the audience, comprising some of the foremost representatives of the cultivated section of the community, and from the distinguished position of the speaker. The thoughtful and lucid address given yesterday by Professor T. Brailsford Robertson furnished no exception to the rule. The subject was "The External Inheritance of Man," and it was treated from the standpoint of a student who has added years of personal research to the lore acquired from a long and close familiarity with the works of the foremost biologists, living and dead, and with the controversies arising out of them. The evolutionary doctrine has been so much before the reading world, especially of late years, that it was natural for Professor Brailsford Robertson to assume a more than elementary acquaintance with it in the persons he was immediately addressing, and in those who will be indebted for a knowledge of his deliverance from the published report. Nevertheless, even those whose information on the subject is not slight will be grateful for having it improved and brought up to date, as it was in the speaker's prefatory remarks, in which he uttered the latest word of science on the transmission of acquired characters. What he said on this branch of a large subject was worth hearing, because the tendency had, for some time, been towards a revival of the theories of the earlier evolutionists to account for the transmutation of species, and not all are in a position to keep a constant and close watch on the latest developments of biological thought.

According to the oldest school of evolutionists, such as Lamarck, Buffon, and the author of "Vestiges of the Natural History of Creation," changes in species were produced by adaptations to new conditions of life and the inherited effects of the use and disuse of organs; in other words, by what in evolutionary phraseology is known as the "direct" action of the environment on the organism, as distinguished from indirect action, such as natural or artificial selection. To take the example quoted by Professor Brailsford Robertson, according to the earlier theorists the neck of the giraffe became elongated by innumerable generations of giraffes stretching up their necks to crop the leaves on the tops of high trees. The theory, it was seen, would not hold water, for every herbivorous animal has been addicted to the practice, but not all species have developed long necks. Darwin, on the other hand, held that the result was brought about by the survival of those animals which happened to be born with rather longer necks than others, and were, therefore, able to get food out of the reach of their shorter-necked brethren. The process going on for generations produced the giraffe. But closer observation, reflection, and experiment combined to discredit the theory that physical characters acquired during the lifetime of the individual from changes of environment or other cause could be transmitted. Experimentalists have professed to produce evidence of the inheritance of acquired characteristics, but Professor Brailsford Robertson is constrained to say that the weight of biological opinion is wholly against such claims being tenable. If tenable, the result, as he suggests, should be apparent in races that have practised for thousands of years certain rites involving mutilation of the body without the smallest effect, so far as regards the inheritance of the mutilation. The compression of the feet of Chinese women has been going on for ages, but has never resulted in the birth of a race of club-footed men or women. Experiments in the

mutilation of sheep, rats, and guinea-pigs, though patiently continued for generations, have had the same negative results, and biologists have had to find another explanation of the changes undergone by species. The theory of Weismann may be said now to hold the field. The cell (which all biologists recognise as the unit of the organism) falls at the outset into two groups—the somatic or body-cells, and the reproductive or germ cells. These last are the vehicle of transmission, changes being brought about by the fortuitous assemblage of "idants," "determinants," and "biophors" in the germ-plasm, which is the battle ground for the struggle between diverse characters for supremacy. It is solely or mainly the characters preponderating in the germ-plasm that are transmitted.

Whatever the explanation of biological changes, science, as interpreted by Professor Brailsford Robertson, has established incontestably the inability of an organism to transmit physical characteristics acquired during its lifetime. The individual may improve his physique, but "cannot transmit that improvement to his offspring." But intellectually and spiritually the case is otherwise; for in the course of countless ages man has acquired what Professor Brailsford Robertson aptly calls an "external inheritance" in the shape of tradition, learning, and ancestral experience—in other words, all the factors that go to make up our civilisation. In the creation of this "externalised form of inheritance" the invention of language has played a prodigious part; but it would be a fatal mistake to underestimate the advantage derived by the human race from the prolongation of the period of juvenile helplessness. For it is this which gives time for the traditions of the race, and all the beneficent influences of civilisation, to exercise their due control, through the parent, guardian, teacher, and even what is known as public opinion, conferring on the child what virtually amounts to an inheritance of inestimable value. But environment could not work its magical changes if the organism were not adapted for the reception of virtually an incalculable number of impressions. To this end the cerebral cortex, or higher part of the brain, is composed of countless nerve-cells or "neurons," and the mental progress of the individual is measurable by the number of neurones which can be stimulated into activity, i.e., can be made to respond to those external influences which are the inalienable legacy of mankind. The neurones are too numerous for all to have a chance of coming into activity in the brief span allowed to a human being, and the individual will probably never be born whose potentialities will be fully developed. But that the potentialities exist, it will be remembered, was one of the grounds on which Lord Balfour founded his argument for a "provisional belief" in immortality, finding incredible the supposition that capacities could have been created which were predestined never to be exercised.

ADV 16/12/26.

THE AUSTRALIAN ABORIGINES.

An annual grant from the Rockefeller Foundation has been made available for research work in each State of the Commonwealth with regard to the Australian aborigines. Funds locally raised for the purpose receive from the Foundation a subsidy on a pound for pound basis. It is with the financial assistance thus afforded that the scientific expedition has been organised which at the end of the present year will leave Adelaide for Central Australia for the purpose of gathering information relating to the wild blacks in that region. Dr. T. D. Campbell will devote himself to matters of general anthropological interest; Dr. J. B. Cleland will specialise in physiological investigations; and Dr. E. Harold Davies will obtain records of corroborees and ceremonial songs, while Mr. Jeffries, a cinematograph operator, will seize what chances there may be of taking pictures of the aborigines in their habit as they live. It is properly felt that science should not lose the few opportunities that remain for the further study of a fast-vanishing race which, having been isolated for centuries, preserves instructive survivals of the early ages of human development. Many works of great value, such as the classic of Spencer

and Gillen, throw light on the customs, superstitions, and tribal organisation of the Australian blacks, and in recent years scientific enquirers like Dr. Bassett have made useful additions to the store of accumulated knowledge. But there is still much work to be done, and, in view of the rapid diminution of the number of aborigines who remain unaffected by contact with civilisation, there is little time in which to do it. This is the justification for what may prove to be the first of a series of new expeditions into the interior.

How many aborigines there are in Australia is to a large extent a matter of guesswork, because there are so many parts of the continent that have not been thoroughly explored. The wild blacks, too, are apt to keep themselves out of sight as much as possible. It is hardly surprising, therefore, that the estimates of the South Australian and Federal statisticians concerning the number of blacks in this State do not agree. There is a discrepancy of over 1,000 in the figures. The Commonwealth estimate shows that on June 30, 1925, Western Australia, with 24,794 aborigines, of whom 22,471 are full-blooded, led the list, and that the Northern Territory with 20,426, of which 19,760 are full-blooded, came next. Queensland had 17,914, and of these 2,839 were half-castes, while New South Wales had 5,985 half-castes and only 1,081 full-blooded blacks. South Australia had a total of 5,107 (3,941 full-blooded), and Victoria 180 (66 full-blooded). The last of the Tasmanian aborigines disappeared many years ago. The figures indicate that the States which have the largest area of unexplored and undeveloped land have

the greatest number of aborigines. A census recently completed of the aborigines in this State by the South Australian Statistical Office gives the total as 3,983 (2,531 full bloods and 1,452 half-castes), and the Chief Protector believes these later figures are the more correct. The difference is due to the varying estimates of the number of blacks untouched by civilisation in the extreme north-western portion of this State. From the humanitarian standpoint there is no part of the problem of dealing with the aborigines which is more difficult than that of the increase of the half-caste population. Are the half-castes to sink to the level of their black parents, or to be absorbed into the higher civilisation, the least creditable aspect of which is responsible for their production? Anthropological science is, however, chiefly concerned with the wild blacks, whose number necessarily diminishes from year to year because, deprived in large measure of their hunting grounds, they cannot by their own exertions obtain what they need for sustenance. Hence the philanthropic movement recently inaugurated to make an effort for their preservation by the establishment of a reserve, where something like a native State may be instituted under white surveillance. It is gratifying to learn on the authority of Inspector Giles (Port Augusta), and Mr. G. Aiston, Protector of Aborigines in the Newcastle district, that the general health of the aborigines in the north and north-west of this State has been good, that they have given little trouble to the police, and that the plenteous rains in the interior have increased their natural food supplies. But the present system of distributing rations, clothing, and blankets from various depots throughout the State, with the addition of medical comforts where needed, will not suffice to prevent the final disappearance of the pure-blooded aborigines, to save whom, as is recognised by the advocates of reservations, much more radical measures must be taken. The interest of anthropologists is, of course, chiefly centred in the blacks who have had little or no contact with Europeans, and the number of these in any case must rapidly dwindle and finally disappear.

THE "TAG" OF LETTERS.

From ARTHUR BLAKE:—The wise and weighty words of the Lord Mayor chronicled under this heading in Thursday's Register, afford much material for serious thought. Mr. Wallace Bruce urged (at a Graduates' Association luncheon, too) that degrees and impressive alphabetical addenda should be a means to an end, not merely an end in themselves. He actually said—"The value of a complete course of study at a university should not be the 'tag' of letters that it gave a man or woman, but a deeper understanding of affairs, a greater mental agility, and a power of adaptability." Fortunately, Australian universities are not, like Oxford and Cambridge, the exclusive preserves of the well-to-do. Yet our advantage here may be worse than useless if the Mayoral words are ignored. The lure of a "tag" after one's name is an insidious one. The graduates who had just received their degrees might well be impressed by the clarity and sweet reasonableness of Mr. Wallace Bruce's warning.

NEWS 20.12.26.

ASTRONOMER RETURNS

Scientific Work in France

SOUTH AUSTRALIA AIDED

Mr. G. E. Dodwell (Government Astronomer), who has been touring Britain and the Continent while on eight months' long service leave, returned home by the Orana. While in Paris Mr. Dodwell met Gen. Ferric (director of wireless telegraphy in France), who gave special assistance in connection with the fixing of the western boundary of South Australia with wireless signals. The general began on October 1 important world-wide operations for the determination of the longitudes of the principal observatories in the world by means of wireless telegraphy. Those signals were received by Adelaide Observatory during the past two months, and Mr. Dodwell declared that much credit was due to the staff in Adelaide, particularly Messrs. A. L. Dawson and A. E. Markey, for the excellent results obtained. Prof. Kerr Grant was acting in charge of the Observatory during his absence, and was specially interested in that branch of work, which was of international importance. Mr. Dodwell met Sir Frank Dyson (Astronomer Royal) at Greenwich, and discussed astronomical matters with him. A pleasing incident of his stay in London was the meeting of Miss Sturt (daughter of Capt. Sturt, the great Australian explorer), who is now 85 years of age. She lives at Beulah Hill, Upper Norwood, said Mr. Dodwell, and in spite of her advanced age was full of vigor both mentally and physically. She took a keen interest in all matters relating to South Australia, where she lived for some of her younger days when Capt. Sturt settled at the Grange. Mr. Dodwell was also in touch with Admiralty House, from whom he received every courtesy and consideration. The hydrographic office showed great interest in the question of the rectification of the Admiralty charts of the South Australian coast, and the redetermination of the latitude and longitude at various points, and also in the magnetic survey which Mr. Dodwell hoped to push ahead as early as possible.

NEWS. 17.12.26.

At the annual meeting of the Advisory Council of Science and Industry held at the office of the Hon. L. L. Hill (Premier) today the latter extended congratulations to Dr. L. K. Ward on his receiving the degree of Doctor of Science at the Adelaide University. Dr. Ward, said the Premier, was a capable officer, and the Government was pleased to know that its officers were seeking further knowledge.