

must free all. The evolutionary concept has been applied to religion and to philosophy. Its influence is seen in sociology in the incessant questioning of the necessity for existing conditions—it has shaken the whole edifice of social tradition. Disease and crime are no longer regarded as inevitable consequences of the organisation of society to be treated by curative measures. They are being attacked with all the scientific knowledge that we now have, and it is intended that they shall be eliminated by the evolution of a type of man and a form of society in which they will not exist. Man is no longer content to allow natural forces to

work their will upon him; he has challenged Nature, bending it to his will, and hereafter will direct his own evolution.

The biological discovery of man's place in Nature has created the need for a biological training for priests and law-makers, for further developments of civilisation will be made possible only through the growth of biological knowledge. The nineteenth century saw revolutionary advance in the physico-chemical field; the twentieth will see equal advance in the domain of biology. In the past, man's control has been over inanimate things: now the conquest of living Nature has begun.

Antarctic Discoveries.

IN his nine hours' flight of 1200 miles over Graham Land on Dec. 19, Sir Hubert Wilkins made discoveries of great value. This was the first flight ever made in Antarctic regions and shows the value of air transport for the explorer in a part of the world where pioneer work has yet to be done. In a few hours, travelling at a speed of 120 miles an hour, Sir Hubert reached farther south than any ship has ever been able to penetrate on the eastern side of Graham Land, where Captain Larsen in 1893 had managed to reach lat. 68° S. Previous knowledge of the coasts of Graham Land ended, with any detail, on the eastern side in about lat. 66° S., and on the western side in about lat. 69° S. Beyond these latitudes, and even to the north of them in many places, knowledge was very sketchy.

The main features of Sir Hubert Wilkins' discoveries can be gathered from his dispatches to the *Times*. From Deception Island he and Lieut. Eielson flew south over the high peaks of Trinity Peninsula and the King Oscar coast, and almost exactly on the Antarctic Circle found an ice-filled twisting channel joining the Weddell and Bellingshausen Seas. The eastern end seems to open between the Weather (Wetter) Island of Larsen and another large island lying about 50 miles farther south. From the description, this island would appear to belong to the zone of basaltic rocks that lies to the east of the folded zone of Graham Land.

The eastern end of this strait was missed by Larsen and Nordenskjöld. Larsen was too far east owing to the wide ice-shelf on that coast preventing his ship approaching, and Nordenskjöld's farthest south on his sledge journey in 1902 was about lat. 66° S. Yet at that point he had a vague suspicion of the existence of a very long inlet if not a strait. At its western end the strait discovered by Sir Hubert Wilkins no doubt opens into the great Auvert Bay which Dr. Charcot placed north of his Loubet Land. Auvert Bay has not been explored and its eastern end is left blank on the charts. The *Times* reports that this new strait has been named Crane Channel.

Farther south Sir Hubert Wilkins reports that the rugged ranges of South Graham Land decrease in height but rise again towards lat. 70° S. In that latitude there exists a second strait, named Stefansson Strait, forty to fifty miles wide joining the Weddell and Bellingshausen Seas. Beyond this

the ice cliff which borders the Weddell Sea from Coats Land westward seems to continue. Very possibly it continues through the strait, borders the Pacific Ocean, and reaches King Edward Land. About here Sir Hubert was forced by lack of fuel to turn, but he writes of the ice-covered surface sloping upwards to the south, which suggests the high plateau of Antarctica. This part of Antarctica receives the name of Hearst Land. The mainland of the southern continent is probably entirely of the same plateau structure with conspicuous fault ranges in the Ross Sea area. The theory that any part of the mainland is a region of Andean folding must now apparently be abandoned.

These details will of course be amplified in the course of time and the photographic record of the flight will help to make the picture complete. At present the news suggests that the folded ranges of Graham Land are lost by depression in about lat. 70° S. They probably skirt the ice-covered plateau of Antarctica, appearing as emerged land in such areas as Alexander Island, Charcot Land, the volcanic Peter Island, and perhaps King Edward Land. So little, however, is known of King Edward Land that its participation in the Andean folds cannot be stated with certainty. The existence of many large tabular bergs off Alexander Island, which appears to lie near the western end of the large strait, suggested to Dr. Charcot many years ago that shelf or barrier ice could not be far distant from that coast.

Sir Hubert Wilkins' discoveries thus throw light on one of the chief problems of Antarctica, namely, the relation of the folded Andean structure of Graham Land and the plateau structure of Victoria and adjacent lands and probably of Coats Land. The more striking discovery of the straits across Graham Land is actually of less importance. It has been known since the days of the *Belgica* expedition towards the end of last century that Graham Land was a heavily submerged area. Its continuity with the folds of South America has been lost by submergence. Belgian and French expeditions on the west, and Swedish and other expeditions on the east, have shown the extent of submergence in outlying archipelagoes and deep inlets. Channels crossing from coast to coast are not surprising in such a land. In South America such channels occur in the far south. These newly

discovered straits are probably seldom if ever clear of ice : in fact, they are probably filled with shelf or barrier ice rather than sea-ice.

Unfortunately, Sir Hubert Wilkins could not land, as his machine had wheels and he saw only snow surfaces fit for ski. But the discoveries show the way for future work, which it is to be hoped

may be done at least in part by Sir Hubert himself during the present season. A flight from Deception Island to Com. Byrd's base at the Bay of Whales in the Ross Sea could not fail to have interesting results, but it would be a long flight and a far more hazardous than the one already accomplished.

R. N. R. B.

Obituary.

DR. C. R. YOUNG, O.B.E.

CHARLES ROBERT YOUNG was born at Nottingham on Mar. 4, 1880, and was the son of Robert Young, a bank-actuary of that city. He received his early education at the Nottingham High School, and from there went to the Royal College of Science, where he remained from 1899 until 1901. He obtained the B.Sc. degree of the University of London and was then appointed lecture-assistant to Prof. Purdie of St. Andrews, a position which he held until 1903.

In 1903, Young was appointed research assistant to Prof. Purdie and lecturer in the University and, until 1907, was engaged in carrying out some important researches with Prof. Purdie. Among these may be noted a paper on the alkylation of rhamnose and one on the optically active forms of alkyl oxysuccinic acid, two important applications of the reaction for the alkylation of hydroxy compounds introduced by Purdie which has proved so fruitful in elucidating the constitution of the sugars. He was awarded the D.Sc. degree of the University of St. Andrews on the results of his research work. From 1907 until 1915 he held the post of lecturer in chemistry at the University of Sheffield, and here, although his duties prevented him from continuing his research work, he proved himself to be an able and effective teacher.

When the late Dr. A. W. Crossley, early in 1916, resigned the secretaryship of the Chemical Warfare Committee in order to take over the control of the then newly established experimental station at Porton, he was moved to recommend Young for the post, for Crossley was a great judge of men, and had recognised Young's special qualifications while acting as external examiner at St. Andrews and Sheffield. From this date until the end of the War, Young fully justified Crossley's choice and carried out the duties of his difficult office with that tact, discretion, and thoroughness which characterised all his work. He endeared himself to all members of the Committee by his willingness to serve and by his innate modesty and unflinching courtesy. When in 1919 there arose the question of the appointment of a technical officer for the Department of Scientific and Industrial Research, the three members of the Committee, who were also members of the Advisory Council of the Department, were unanimous in recommending Young for the new post.

Young served the Department for nearly ten years, and was, at the time of his death, secretary of the Scientific Grants Committee. All those who came in contact with him, both in his official and

personal capacities, recognised his true worth. He had a kindly, rather shy, temperament and a very lovable disposition. Self-effacing and modest, he nevertheless held his views strongly and was quick to express them with force when occasion required. He was created an Officer of the British Empire for his War services. He died on Dec. 26 last, after a brief illness, and leaves a widow and two daughters.

J. F. T.

WE regret to record the death of Dr. Dawson F. D. Turner at the age of seventy-one years. He was one of the few medical men who took up the study of X-rays in medical work in the real pioneer days. Unfortunately, he suffered from the rays when their dangerous character was scarcely known, but this did not prevent many years of excellent work on his part. He was head of the X-ray department in the Edinburgh Royal Infirmary for nearly twenty-five years, and during this time contributed original papers on the subject of X-rays and medical electricity. His book on the therapeutics of radium was one of the first, if not the first, published in Great Britain. He was a vice-president of the Röntgen Society, and at one time president of the Royal Scottish Society of Arts.

WE regret to announce the following deaths :

Prof. John M. Coulter, professor of botany in the University of Chicago from 1896 until 1925 and a foreign member of the Linnean Society of London, who has been editor of the *Botanical Gazette* since 1875, on Dec. 23, aged seventy-seven years.

Mr. J. S. Diller, who served with the U.S. Geological Survey for forty-one years and was well known for his studies of the geology of the Pacific Coast, on Nov. 13, aged seventy years.

Dr. Alois Kreidl, professor of physiology in the University of Vienna, on Dec. 6, aged sixty-four years.

Prof. F. P. Leavenworth, emeritus professor of astronomy in the University of Minnesota, known for his work in astronomical photography, on Nov. 12, aged seventy years.

Sir Charles Macara, Bart., founder of the International Federation of Master Cotton Spinners' and Manufacturers' Associations and widely known in industrial circles, on Jan. 2, aged eighty-three years.

Prof. E. H. L. Schwarz, professor of geology in Rhodes University College, Grahamstown, South Africa, on Dec. 19, aged forty-five years.

Sir Henry Trueman Wood, secretary from 1879 until 1917 of the Royal Society of Arts, on Jan. 7, aged eighty-three years.

Prof. Alexander Ziwet, professor of mathematics at the University of Michigan since 1888, and an associate editor of the *Bulletin of the Mathematical Society*, on Nov. 18, aged seventy-five years.