of distinguishing ice and land from the air, the existence of these channels still awaits confirmation.

The expedition will be equipped with an airplane. It is intended that the machine and crates of equipment will be taken in the *Discovery II* from either Stanley or South Georgia to Deception Island next December. Apart from this the *Discovery II* will not be used by the expedition, which is to purchase a suitable vessel.

According to present plans, the expedition will leave for Graham Land at the end of the summer. The examination of the coastal area mentioned may supply the answer to the old question as to whether the Antarctic is one or two continents.

Support of the British Government to the extent of £10,000 has been promised by the *Discovery* Committee, and a contribution of £1,000 is being made by the Royal Geographical Society.

While not taking any part in the organization of the expedition, the committee is interested in everything relating to whaling and hydrographic research, as any information gained by the expedition regarding the habits and food of whales in the Antarctic areas will be of great value to the whaling industry.

It is stated that Rymill is regarded as an excellent leader, and a worthy follower of Scott and Shackleton. He took over the leadership of the British Arctic Air Route expedition when H. G. Watkins, the English explorer, was drowned when the Eskimo kayak from which he was seal fishing, overturned off the coast of Greenland on August 20, 1932.

EXCAVATIONS IN PALESTINE BY GREAT BRITAIN AND THE UNITED STATES

DR. GEORGE GRANT MACCURDY, of Yale University, director of the American School of Prehistoric Research, has announced that the seventh and final season of joint excavations in the Valley of the Caves at the western foot of Mount Carmel by the American School and the British School of Archeology in Jerusalem is to begin this month, with Miss Dorothy Garrod, of the British School, in charge. Dr. MacCurdy reported the opening in the British Museum of an exhibition of the important Palestinian prehistoric remains resulting from six expeditions conducted jointly by the American and British Schools. Miss Garrod conducted five of these expeditions; Mr. Theodore D. McCown, of the American School, had charge of one.

The specimens exhibited come from a group of three caves in the Wady-Mughara (Valley of the Caves) at the western foot of Mount Carmel, twelve miles south of Haifa, and looking over the Plain of Sharon to the sea. There are also exhibited rare specimens from the Cave of Kebara, some ten miles south of the Wady-Mughara group.

A composite section of the three Wady-Mughara caves represents at least thirteen culture levels, beginning with the Lower Paleolithic of the Mindel-Riss Interglacial Epoch and ending in historic time: Tayacian, Upper Acheulian, Acheulio-Mousterian, Lower Mousterian, Upper Mousterian, Lower Aurignacian, Middle Aurignacian, Upper Aurignacian, Lower Natufian, Upper Natufian and Bronze Age to Recent. At least 100,000 years have elapsed since man inhabited the lowest relic-bearing level of this composite section.

In addition to the cultural remains there are numerous skeletal remains of fossil man: a thigh bone of pre-Neandertal man, ten almost complete Neandertal skeletons and some sixty skeletons of the Natufian (Mesolithic) race. These Natufians were fond of ornaments, such as beads, pendants, etc. They seemed to have had the habit of removing the two front teeth before reaching the adult stage. Some of their bone sickle hafts were beautifully carved to represent animal forms. They had apparently learned their first lessons in a simple form of agriculture, but had no domestic animals; neither had they learned the art of pottery making. It is expected that remains of a still older race may be found at the bottom of the Tabun cave, where digging from now until the first of July will be carried on.

Coincident with the opening of the exhibition at the British Museum, Mr. McCown arranged a series of exhibits in the main hall of the Royal College of Surgeons. This was also in connection with the annual Hunterian Festival, Austin Chamberlain being guest of honor at the dinner. Mr. McCown, who is on the faculty of the University of California, will remain for another year at least at the Royal College of Surgeons, in order to complete for the two schools his study of the Neandertal skeletons.

THE KILLCOHOOK MIGRATORY BIRD REFUGE

BY executive order of February 3, President Roosevelt established the Killcohook Migratory Bird Refuge on areas acquired by the War Department adjacent to Fort Mott, N. J. This, the latest of a series of inviolate sanctuaries for wild fowl established under authorization of the Migratory Bird Conservation Act of 1929, and administered by the Bureau of Biological Survey, U. S. Department of Agriculture, is the first Federal migratory-bird refuge in New Jersey, and also the first in Delaware.

The area of the new refuge embraces approximately 1,440 acres nearly surrounding, but excluding, the Fort Mott Military Reservation and the adjacent Finns Point National Cemetery, both of which are in Salem County, New Jersey. The refuge itself, however, by reason of the interstate boundary at this

point, is situated both in Salem County, New Jersey, and in Newcastle County, Delaware.

Establishment of this refuge resulted from cooperation between the Department of Agriculture and the War Department. The tract embraces areas of land and water acquired by the War Department several years ago to be used as a place to deposit spoil being dredged from the channel of the Delaware River. Though the dredging operations will continue, the area of the refuge is so extensive that it will be attractive to migratory birds for many years. Most of it consists of water and marshland. Adjoining the marsh area at present is a very large pool of quiet water created by the construction of the Killcohook Dike and the Bulkhead Bar Dike, the former extending down the Delaware River from a jetty light and the other eastward from the light. Within the limits of this pool, which constitutes nearly one third of the refuge, migratory birds congregate in great numbers, spring and fall.

In addition to offering waterfowl a place to rest and feed, the new refuge is within the nesting range of the black duck. Paul G. Redington, chief of the Biological Survey, states that "It is anticipated that the area will not only prove to be a sanctuary for the waterfowl within an extensive region where there are now no refuges, but will also offer opportunity to rear more ducks than ever before by reason of the protection given. It should also serve to increase public interest in wild-fowl conservation by reason of its ready accessibility and because many motorists visit Fort Mott and the Finns Point National Cemetery."

THE LONGEVITY OF CHEMISTS

THE eighty-seventh meeting of the American Chemical Society will be held at St. Petersburg, Florida, from March 25 to 30. In connection with this meeting the society has made public the results of a study made by Dr. Harrison Hale and Leslie Kyle, of the University of Arkansas, on the age of election and length of life of honorary members and presidents of the society. It is reported that of the fifty-nine chemists elected to honorary membership by the society, forty-two died at an average of 75.5 years. Some of those who lived longest began laboratory work as boys, and retained their devotion to chemistry until the last. The other seventeen are living. Their ages average 68.4 years. Presidents of the society survived to an average age of 73 years. Individual records follow:

Michael Eugene Chevreul, who died in 1889 at the age of 103, began work in a chemical laboratory in Paris at the age of seventeen years and taught until ten years before his death. Born at Angers, France, in 1786, Chevreul was educated in Paris. He received an LL.D. from Harvard University, and was ninety-eight years old when the society gave him an honorary membership which he lived to enjoy for another five years. His hundredth birthday was publicly celebrated in Paris.

Dr. Charles Frederick Chandler, called "America's first and most distinguished industrial chemist," is another example. He died at the age of eighty-nine years in 1925, some four years after he was elected to honorary membership.

Ernest Solvay, of Belgium, noted for his ammonia process for manufacturing soda, was eighty-two years old when he was elected to membership in 1920. He died in 1922.

Ira Remsen, past president of the Johns Hopkins University and founder of the *American Chemical Journal*, was eighty years old when he was elected in 1926. He died one year later.

William Crookes, who made the famous Crookes vacuum tubes and started the world on the way toward the wonders of the x-ray, was elected in 1898 at the age of sixty-six years. He died in 1919, aged eighty-seven years.

Edward William Morley, born at Newark, New Jersey, was elected in 1900 at the age of sixty-two years in recognition of his work in establishing the ratio of hydrogen and oxygen in water.

Other honorary members, all elected in 1876, who lived to a ripe old age were: Marcellin Pierre Bertholet, died, 1907, aged 80; Robert Wilhelm Bunsen, died, 1899, aged 88; Stanislao Cannizzaro, died, 1910, aged 84; Jean Baptiste Andre Dumas, died, 1884, aged 84; Edward Frankland, died, 1899, aged 74; Alexander William Williamson, died, 1904, aged 80; Friedrich Wöhler, died, 1882, aged 82.

The average age of the fifty-nine honorary members at the time of election was 62 years. The average of those elected between 1876 and 1906 was 60 years. The average of those elected between 1906 and 1927 was 64 years, having attained this honor later in life than scholars of the previous era.

The ages of sixteen of the seventeen living honorary members are: Walther Nernst, 70; Marie Skladowska Curie, 67; Victor Grignard, 63; Paul Kestner, 70; William Jackson Pope, 64; S. P. L. Sorensen, 66; Bohuslav Brauner, 79; Giuseppi Bruni, 61; Ernst Julius Cohen, 65; Frederick George Donnan, 64; James Colquhoun Irvine, 57; William Lash Miller, 68; Ame Pictet, 77; Paul Sabatier, 80; Joji Sakurai, 76; Richard Willstätter, 62. Of Frederic Swarts, elected in 1926 while at the University of Ghent, the society has no record.

Nernst, of the University of Berlin, Nobel laureate, is the youngest chemist to have been elected to honorary membership. He was elected in 1905, at the age of forty-one years.

Madame Curie, winner of the Nobel Prize for her work on radioactivity, was elected in 1910 at the age of forty-three years. Jacobus Hendrik van't Hoff, the first Nobel Prize winner in chemistry; Henri Moissan, famed for his electric furnace; Svante Augustus Arrhenius, and Grignard, were all elected at the age of forty-six years. Moissan died in 1907, aged fifty-five years, and van't Hoff in 1908, aged fifty-six years.