

lowing year she cleared seven sculptured tomb-chapels at Saqqara. But when her husband left the Egypt Exploration Society, the whole burden of raising funds for his work fell on her. It was then that she developed that gift of rousing not merely interest but also enthusiasm, and it was through her efforts that he was able to continue his work, with only the break of the First World War, until within three years of his death. After his death she devoted herself to preparing his unfinished manuscripts for publication, and on her return to England she saw them through the press.

Lady Flinders Petrie herself wrote two books. Her report on her excavations at Saqqara was published under the name of "Seven Memphite Tomb-Chapels". In this the carefully drawn plans and details of building show her accurate work, and the letterpress also shows the same meticulous accuracy. Her other book, "Early Egyptian Hieroglyphs", though less imposing in size, is perhaps the more important of the two. For anyone studying the actual meaning of the hieroglyphic signs and the objects which they represent, this book is indispensable. The signs are drawn from examples of the First and Second Dynasties, and the identification of the object which the sign represents often throws light on the root meaning of the sign when used in later writings. It is a book with which every student of Egyptology should be well acquainted.

M. A. MURRAY

Prof. O. W. Tiegs, F.R.S.

WITH the death on November 5 of Prof. O. W. Tiegs, Australia has lost a great zoologist. An avowed disciple of descriptive morphology during an age when most biologists are turning more and more towards experimentation, Tiegs has an assured place in the history of zoology.

Born in Queensland in 1897, Oscar Werner Tiegs received his early education at Brisbane Grammar School and then proceeded to the University of Queensland, obtaining his B.Sc. with first-class honours in biology in 1919. It was his original intention to enter the medical profession; but, fortunately for zoological science, there was no medical school in Queensland and so he decided to continue his studies in zoology. After carrying out postgraduate work on insect metamorphosis and on the biological control of prickly pear, he joined the staff of the Zoology Department of the University of Adelaide in 1922, obtaining his D.Sc. from that University in 1925. In the same year, he was appointed to a lectureship in the University of Melbourne. Three years later, he was awarded the Syme Prize and Medal, one of Australia's foremost scientific prizes. The award of a Rockefeller Fellowship enabled him to spend a year working in Europe. Most of this time was spent in Cambridge and Utrecht. After his return to Melbourne, he was appointed associate professor of zoology, a post which he held until 1948, when he was called to the chair on the retirement of the late Prof. W. E. Agar.

Prof. Tiegs was elected a Fellow of the Royal Society in 1944 and was a foundation member of the Australian Academy of Science. His research activities were mainly in the field of nerve and muscle histology and of arthropod embryology. His study of the embryology of myriapods and insects, recorded in a magnificent series of memoirs, culminated in the development of his well-known views on the ancestry

of the insects. Just a few days before his death, he completed a masterly review of the whole problem of arthropod evolution. In some of his more recent research activities, he returned to a study of the histogenesis of flight muscles in insects. All his published work was superbly illustrated, for Tiegs had great artistic ability. To watch the metamorphosis of a plate, from the rough pencil sketches made at the binocular microscope to the finished work ready for reproduction, was indeed a fascinating spectacle.

By nature, Tiegs was a shy and reserved man, more at home in the laboratory than at the committee meeting or the social function. He possessed a keen sense of humour and a fine appreciation of art, literature and music. To share with him the pleasures of a musical evening was a joy indeed. His death is a severe blow to zoology and a great personal loss to those who have enjoyed the privilege of working in his department.

A. M. CLARK

Mr. George Patchin

GEORGE PATCHIN, born in 1877, died on September 7 after a long illness. He entered the Royal School of Mines in 1895 and obtained the associateship of the College with first-class honours in 1898. He was also awarded the Bessemer Medal, presented to the best student of the year.

In 1898, Patchin was appointed lecturer in metallurgy at Birkbeck College, London, and remained there until 1912 when the department was closed and the work was transferred to the Metallurgy Department of the Sir John Cass Technical Institute. He joined the Cass department under the late Mr. C. O. Bannister, whom he succeeded in 1919. Patchin published several papers, chiefly on cupellation, both independently and in collaboration with Bannister. During the First World War, he undertook investigations in the Department for the Inventions Branch of the Ministry of Munitions and served on several committees of that Ministry.

He succeeded the late Dr. C. A. Keane as principal of the Sir John Cass Institute in 1926, but continued also in his post as head of the Metallurgy Department, and he held both posts until his retirement in 1945. He was greatly attached to the interests of Sir John Cass's Foundation, and in his work for the Institute during more than thirty years his constant purpose was to advance the standards of the courses both in his own Department and later in the other departments which came under his care.

In 1931, Patchin was engaged in an important extension of the Institute building. He devoted great care to this work, which unfortunately had to be considerably curtailed because of the economic depression; but he justifiably took great pride in the results achieved. During the Second World War, much of the normal work of the Institute had to cease. The training of navigating officers for the merchant navy and of radar mechanics for the R.A.F. was undertaken under conditions that were often both difficult and uncomfortable. It became impracticable to hold most evening classes, and students attended their courses in the science departments at week-ends. Although there was major damage to the building, particularly in an air raid in 1941, he never allowed work to be brought to a standstill.

Patchin took a particular interest in all branches of metallurgical education. He was an active member

of the Bursaries and Lectures Committee of the Company of Armourers and Braziers from the time when it was set up in 1926 until its activities were brought to a close by the outbreak of war in 1939. He served on, and was chairman of, metallurgical advisory committees of the City and Guilds of London Institute, and he gave much time to this work after his retirement.

He was meticulous and economical in his administration, and decisions were never taken without careful consideration. His somewhat austere manner tended to conceal his essential kindness and the satisfaction he found in helping others. His first wife died in 1931 as the result of an accident. He is survived by his second wife and by the two daughters of his first marriage.

A. M. WARD

NEWS and VIEWS

Oceanography at Monaco : Captain J. Rouch

CAPITAINE DE VAISSEAU J. ROUCH recently retired from the directorship of the Oceanographical Museum of Monaco on reaching the age of seventy-two and a half years. He had held the post since the death of Dr. Richard in 1945. Owing to successive monetary devaluations, the original endowments of the foundation had become of derisory value, and it redounds greatly to the credit of Rouch's efforts that the vast museum and its companion institute in Paris can now function on the funds produced by entrance fees paid by visitors. During his term of office, the yearly tally of visitors rose from 170,000 to 560,000. Rouch was a collaborator of Jean Charcot during his second Antarctic Expedition of 1908-10 in the *Pourquoi-Pas ?*, and was responsible for the meteorological and oceanographical observations in addition to those on atmospheric electricity. That polar work of his was published in three excellent memoirs of high repute. After his return from the Charcot expedition, Captain Rouch was elected professor of meteorology, oceanography and hydrography at the *École-Navale*, and was, in 1937, made professor of physical oceanography at the Paris Oceanographical Institute, which had been founded and endowed by Prince Albert I of Monaco in 1906. During the years 1943-48 he published his three-volume treatise on physical oceanography. From his pen have come numerous publications on marine meteorology, on the polar regions, and on the Mediterranean Sea, and his writings on hydrography and atmospheric electricity amount to a very impressive total. The many oceanographers who would readily proclaim Rouch the greatest living writer on descriptive oceanography would add their meed of praise for the service he has done in recording so much of the history of the subject in a large array of books and papers which are a delight to read. A facile and elegant writer, he has the attractive habit of adorning his pages with effective citations from the classics. To read Rouch on the subject of the Bosphorus, for example, is to read much about Jason, Herodotus, Darius, Xerxes and other famous men of ancient days. Rouch is a vice-president of the International Association of Physical Oceanography, a member of the French Marine Academy, and has, since 1946, been a corresponding member of the Academy of Sciences.

Captain J.-Y. Cousteau

CAPTAIN JACQUES-YVES COUSTEAU, distinguished for his work on underwater exploration made possible by the aqualung developed by him in association with Émile Gagnan, is forty-six years of age. Well known to the general public because of his highly-successful film, "The World of Silence", Cousteau's first experiments with self-contained underwater

breathing apparatus date back to 1937. It was in 1944, in conjunction with Commandant Tailliez, that he established the "Groupe d'Études et Recherches Sous-Marines" (G.E.R.S.) for the study of the physiology and techniques of diving. Between 1947 and 1949 he was busy fitting out the vessel *Ingénieur Élie-Monnier* as an oceanographical ship, and was in command of her when he attended the unlucky trials of the Piccard bathyscaphe off the Ivory Coast. The participation of the French Navy in that expedition, and the subsequent signature of the Franco-Belgian convention in respect of bathyscaphe *F.N.R.S. III*, were brought about by the Museum's new director. Captain Cousteau has himself made two bathyscaphe dives to 1,450 and 1,600 metres depth, respectively, and holds the distinction of taking the first colour photographs and colour films by artificial lighting while diving free style. His own free-diving exploits have taken him down to 90 metres depth. Much occupied with underwater photography, submarine television and related activities carried out in great measure from the oceanographical research vessel *Calypso*, bought and equipped with private money obtained by him, Cousteau has recently aroused great interest by his new technique of anchoring ship in the deep-sea to a slender cable of nylon. Having so anchored the *Calypso* in 4,000 metres of water, with a cable-length no more than $1\frac{1}{2}$ times depth sufficing well for roughish water, Cousteau is confident that his method has no ocean depth limit. New winches of his design are under construction for the purpose in France at the present time.

Aerodynamics at the Royal Aircraft Establishment : Mr. L. F. Nicholson

MR. L. F. NICHOLSON has resumed his duties as head of the Aerodynamics Department, Royal Aircraft Establishment, on his return to Farnborough after a year at the Imperial Defence College; his promotion to the rank of chief scientific officer has been announced. Mr. Nicholson was educated at King's College, Cambridge, graduating in mechanical sciences in 1939. During his earlier years at Farnborough he was a member of the Engine Department, and worked on the aerodynamics of engine cooling. During 1947-51 he controlled an experimental group concerned with the design and operation of supersonic wind tunnels, and in 1951 he was appointed head of the supersonics division of the Aerodynamics Department. In this period he became well known to the aircraft industry, since the design problems of supersonic aircraft and missiles were making considerable demands of research workers. The Aerodynamics Department comprises a formidable research unit, since it embraces the aerodynamic facilities of the Royal Aircraft Establishment both at Farn-