

watched by every superintendent engineer. The *California* is 601 feet long and has a gross tonnage of more than 20,000 tons. Steam is supplied by oil-fired Babcock and Wilcox boilers at 275 lb. pressure and 120° F. superheat to two turbo-alternators, each of 8500 s.h.p. running at 2880 revolutions per minute, which supply current to the twin-screw propelling motors running at 120 r.p.m. At full power the vessel has a speed of 18 knots, and the consumption of oil on the first voyage for all purposes was 0.8 lb. per h.p. The *Viceroy of India* is 612 feet long, with a gross tonnage of 19,000 and a displacement of 25,000 tons. In her, six Yarrow boilers supply steam at 350 lb. pressure to two 9000 k.w. turbo alternators running at 2700 r.p.m. supplying current to twin screw motors running at 109 r.p.m. The speed of the ship at full speed will be 18½ knots, while with only one alternator in use a speed of 16½ knots will be obtained. It is stated that the guaranteed consumption for propelling purposes only is 0.6 lb. per s.h.p. per hour. Besides the main generators, the *Viceroy of India* has four 500 k.w. auxiliary turbo generator sets and two 165 k.w. oil-driven sets, while for the pumps, fans, steering motors, etc.,

which are electrically driven, there are no fewer than forty-three circuits. This notable vessel is advertised to sail on her maiden voyage on Mar. 28. It has been announced that the new 'Super-Olympic' liner building at Belfast for the White Star Line will also have electric drive, but particulars of her machinery have not yet been published.

Progress in steam marine machinery has unquestionably been stimulated by the growing popularity of the motor-driven ship with its surprising economy in fuel. For fast ships and warships, however, the steam turbine is at present the only suitable engine, while in other classes of vessels no doubt various types will continue to be used according to circumstances. In Lloyd's Register Book the tonnage of ships above 100 tons included amounts to 65,159,413 tons gross, of which 5,432,302 tons are driven by oil engines, 9,682,063 tons by steam turbines, and 50,045,048 tons by steam reciprocating engines, while of the total tonnage 62.4 per cent burn coal and 37.6 per cent use oil either under the boilers or in the engines. Some of the steamers fitted for burning oil can if necessary use coal.

Obituary.

SIR BERTRAM WINDLE, F.R.S.

IT is with deep regret that we record the death of Sir Bertram Windle, professor of anthropology in St. Michael's College, University of Toronto, which took place in Toronto on Feb. 14. Bertram Coghill Alan Windle was born on May 8, 1858, the son of the Rev. S. A. Windle, vicar of Market Rasen, Lincolnshire. He was educated at Kingstown and Repton schools, and had a distinguished career at the University of Dublin, where he graduated M.D. and D.Sc. He was for a time Dean of the Medical Faculty and professor of anatomy and anthropology at the University of Birmingham. He afterwards became professor of archaeology in University College, Cork, of which he was appointed president in 1904, holding this office from 1904 until 1919, when he went to Toronto. During his residence in Ireland he was extremely active in educational and other affairs, with results that were not always conducive to his tranquillity of mind.

In his more strictly professional studies, Windle attained considerable eminence. His contributions to anthropological literature were marked by originality and freshness of view. Besides papers in scientific journals, he was the author of a manual of surface anatomy, now in its third edition, and of "The Proportions of the Human Body," published in 1892. He was, however, almost as widely known as an archaeologist as an anatomist. He published several books on prehistoric archaeology, of which the best known are "Life in Early Britain" and "The Prehistoric Age." His "Romans in Britain" was of a more popular character and was based on lectures delivered in Toronto. He was elected a fellow of the Royal Society in 1899. The breadth of his interests was also shown in a series

of literary guide-books, of which "Shakespeare's Country" is most likely to be of enduring value.

Windle's main preoccupation, however, outside his professional studies, was in religious questions, and especially the relations of religion and science. At the age of twenty-five he joined the Roman Catholic Church, and by far the greater part of his not inconsiderable literary output was concerned with religion. "The Church and Science" was awarded the Gunning Prize in 1917, and Windle was honoured for his writings by two popes; Pius X. made him a knight of the order of St. Gregory, and Pius XI. made him an honorary Ph.D.

NEWS has just reached us of the death on Jan. 17 at Moscow of Dr. G. S. Zaitzev, director of the Turkestan Plant Breeding Station. Beginning in 1914, Dr. G. S. Zaitzev devoted himself to serious and large-scale genetic, botanical and breeding work in cotton, occupying the position of the chief of the Division of Plant Breeding of the Golodnostepskay Agricultural Experiment Station until 1919. In 1919 Dr. Zaitzev was appointed director of the Turkestan Plant Breeding Station, where he remained until his death, which has interrupted a life full of scientific achievements in our knowledge of the cotton plant. In addition to his work at the Turkestan Plant Breeding Station, Dr. Zaitzev was engaged in the U.S.S.R. Institute of Applied Botany (Leningrad) as cotton specialist, and in the Central Asia State University (Tashkent) as professor of cotton growing at the Agricultural College. By the death of Dr. Zaitzev, the Soviet Union and the whole world have lost a distinguished scientific worker in the field of genetics and plant breeding, whose memory will be long preserved and honoured.