

## NEWS and VIEWS

## Hydraulics Research :

Sir Claude Inglis, C.I.E., F.R.S.

SIR CLAUDE INGLIS is retiring from the post of director of the Hydraulics Research Organization of the Department of Scientific and Industrial Research. According to "Who's Who", Sir Claude was born in 1883; those who are familiar with him and with his work will read this statement with some incredulity, for it implies that at the date of his appointment as the first director of the Organization he was already some sixty-three years of age. Although so many fundamental contributions to the subject of hydraulic scale models had been made by British engineers (notably Osborne Reynolds and A. H. Gibson), facilities for such investigations, especially in the field of loose-boundary hydraulics, then lagged far behind those established in many places abroad. Happily, the situation is now different, and this is very largely due to Sir Claude's quiet but effective persistence, his infinite patience and his capacity for continuous hard work; all combined with his specialized knowledge and the experience of his earlier directorship of the Indian Waterways Experiment Station at Poona. The Department of Scientific and Industrial Research now has a magnificent Hydraulics Research Station at Wallingford (a site chosen by Inglis), which includes a main experimental hall with a floor area of 60,000 sq. ft. Before joining the Department, Sir Claude had comparatively little experience of tidal models; nevertheless, he has since directed several notable tidal model investigations of considerable complexity. A remarkable feature of his directorship has been his enthusiasm for the development of new measuring devices, the design of novel tide- and wave-making machinery and the exploitation of radioactive isotopes as an aid in tracing the movement of sand and silt. At the same time, he has maintained his interest in the basic mechanics of the regime of channels and the meandering of rivers.

Mr. Fergus H. Allen

MR. FERGUS H. ALLEN, who has been appointed to succeed Sir Claude Inglis as director of the Hydraulics Research Station at Wallingford, has earned widespread respect and confidence during tenure of the office of assistant director. The site of the Station was only acquired in 1949, and the design and construction of buildings and equipment there have clearly demanded strenuous efforts by all concerned and not least by Mr. Allen, who has shared the responsibility for many of the investigations undertaken both at the Station itself and on other premises, and has at the same time shouldered many of the administrative duties. Mr. Allen has visited hydraulics research laboratories abroad and has been the author or co-author of several publications, including "The Regimen of the Thames Estuary as affected by Currents, Salinities and River Flow", a paper which aroused considerable discussion when it was read by Inglis and Allen at the Institution of Civil Engineers in May 1957. At meetings of the Hydraulics Research Board of the Department of Scientific and Industrial Research and at conferences held by bodies such as the International Association for Hydraulic Research and the Permanent International Association of Navigation Congresses, Mr. Allen has made a very favourable impression by his

grasp of the subjects under discussion and by his capacity for lucid exposition. The Hydraulics Research Station may look forward with confidence to continuing progress under his direction.

## Irrigation Research Station, Griffith :

Mr. E. R. Hoare

MR. E. R. HOARE has been appointed as officer-in-charge of the Commonwealth Scientific and Industrial Research Organization, Irrigation Research Station, Griffith, New South Wales. Mr. Hoare comes from the United Kingdom Institute of Agricultural Engineering, Silsoe, Bedfordshire. He has been in charge of the Horticultural Engineering Department, which has made important contributions to research on plant cultivation. He graduated in mechanical and electrical engineering at the University of London in 1934. For eleven years he was research engineer and physicist with the General Post Office. He undertook important services for the Armed Forces during the War, including the synchronization of all radar stations on the east coast of Britain, and the design and installation of D-day cross-channel communications.

Mr. Hoare has applied his experience as a radio and electrical engineer to the study of the basic requirements of the growing plant. In this work he and his team of research workers have developed many original and sensitive electronic instruments for assessing such factors as the respiration of plants and their sensitivity to light and heat. Among the projects successfully developed by the Horticultural Engineering Department under his guidance have been the study of the uptake of water in plants both in glasshouse and open ground cultivation; cultivation and tractor problems; plant-culture under glass with special reference to heat requirements; crop- and pest-spraying problems; study of light, radiant energy and radioactivity in relation to plant growth.

## Giovanni Alfonso Borelli (1608-79)

MATHEMATICIAN, astronomer, physicist and physiologist, Giovanni Alfonso Borelli was the son of a soldier and was born at Naples 350 years ago on January 28, 1608. A pupil of Galileo, he became professor of mathematics at Messina in 1649 and seven years later, at the invitation of Ferdinand II, Duke of Tuscany, went to Pisa. There he met Malpighi, whom he taught mathematics and physics and from whom he acquired an interest in physiology. Borelli looked upon locomotion, respiration and digestion as mechanical processes, describing digestion as the result of a mechanical trituration of the food within the stomach. He taught, erroneously, that contracting muscle increases in bulk due to fermentation in muscle, and believed that the nerve supplying the muscle discharged a fluid, *succus nervus*—his substitute for Galen's 'animal spirits'. His neurogenic theory of the heart beat, revived by J. J. C. Legallois in 1812, held the field against the myogenic theory until modern times. Borelli's "De motu animalium", an enormous work in two volumes, was published posthumously in 1680-81. His pseudonymous letter, "Del movimento della cometa apparsa il mese di dicembre 1664" (1665), contains the first suggestion of a parabolic path, and his "Theorica medicorum planetarum ex causis physicis deducta" (1666) deals with the influence of attraction on the satellites of Jupiter. In 1679 he invented a diving apparatus capable of altering the specific