

holes proved that death occurred within a few seconds, the animals stretching out without excessive movement and without screaming. All the accessible holes were then closed, as so many were bird-holes only. The re-opened holes were treated a fortnight later with the dust, and it was possible to fumigate all holes except those in the steepest parts of the cliffs and among cliff-falls and boulders. When this first treatment was completed, it was estimated that about 90 per cent of the rabbits had been killed. Rabbits from the cliffs seemed to be responsible for many holes afterwards found re-opened inland, and it is probable that had the island been connected with the sea without cliff or boulder 100 per cent extermination would have been achieved.

As it is, after the holes had been gone over for a third time, it was calculated that only about 400 of the original 10,000 (in round maximum figures) rabbits were left, and all of these appeared to be rock-dwellers coming to the top of the island to feed only at night. On this showing, 'Cyanogas' was therefore 96 per cent successful for the island as a whole; excluding the economically untreatable cliff-land, it was still nearer complete success.

Proof of this success was forthcoming in the summer of 1939. White clover appeared where it was always rare and stunted before, grass grew long and luxuriantly, and the absence of rabbit-pellets was remarked. As much as four tons of hay were cut off an acre of the best land; and hay had not been cut since the land was farmed in the last century. The grass continued to grow; one hundred sheep imported in the autumn were found quite inadequate to graze it down and it was eventually beaten down by winter storms.

The residue of rabbits in the cliffs began to breed with rapidity. Normally, under climax conditions, the island rabbits only breed from March until July inclusive. At present they are breeding all the year round as a result of the abundant feed. During the summer of 1939 they spread somewhat inland, helped by the sea-birds, which opened all the blocked holes in that spring. Control has again been carried out this winter by means of 'Cyanogas', and at the moment of writing, the population is again reduced to a residue of rock-dwelling rabbits.

¹ Martin, C. J., *Univ. Cambridge Inst. Animal Pathol. Report*, 4, 16-38 (1934-35).

OBITUARIES

Prof. A. G. Högbom

PROF. ARVID GUSTAF HÖGBOM, who died on January 19 at the age of eighty-three years, had been a leader in geological work and thought in Sweden for more than half a century, and he came to occupy a dominant position among the geologists of his native land similar to that of his contemporary the late Prof. W. C. Brøgger in Norway (see *NATURE* of April 27, p. 652). A student at Uppsala, Högbom was appointed lecturer there in 1885. In 1891 he joined the staff of the University of Stockholm, but returned to Uppsala in 1896 as professor of geology and mineralogy, occupying the chair until his retirement in 1922; he continued active in investigation and writing until the end. He was born in northern Sweden, most of his field work was carried out there, and he was ever active in promoting the economic development of this sparsely populated region.

Högbom's work was mainly concerned with the Pre-Cambrian and the igneous rocks, the ores, glacial and geomorphological problems, and in latter years with historical and philosophical aspects of the science. Many of the views now widely held regarding Swedish geology were propounded by him, and they had considerable influence in shaping the thought of workers in other lands. The following is a selection only of the subjects on which Högbom made important contributions: the magmatic origin of the

iron ores of northern Sweden, the Caledonian overthrusts, the nepheline syenites and associated rocks, the sub-Cambrian peneplain, the Norwegian coastal platform, glacial and fluvio-glacial erosion, the glacial lakes of Sweden, the significance of the clay 'varve', solifluxion, the post-glacial uplift of Scandinavia and the sequence of its climatic changes. Vol. 15, 1916, of the *Bulletin of the Geological Institution of the University of Upsala* was dedicated to him on the occasion of his sixtieth birthday, and the bibliography of 145 items given there bears witness to the remarkable range of his studies.

Högbom was an active participator in international geological congresses, and he will be remembered as a prominent figure at the Congress in Stockholm in 1910. The Geological Society of London honoured him by electing him foreign correspondent in 1911 and foreign member in 1927. L. HAWKES.

Prof. V. I. Sihvonon

ONE of the first victims of the recent Finnish-Russian War, killed on November 30 during an air raid on Helsinki, was Prof. Väino Ilmari Sihvonon, professor of physical and electro-chemistry in the Tekniska Högskolan of the University of Helsinki. Born in Kangasniemi in 1889, he became a student