the necessary conditions for its manufacture. When it was proposed to restrict the export of Scottish Salt it was pointed out that the coal and salt industries were inseparable—10,000 persons were engaged in the working of both. Should the production of salt be largely diminished the result must be a proportionate decrease in the output of coal.

3. "Observations on Flinty Crush Rocks." By Professor T. J. Jehu, M.D., F.G.S.

Flinty Crush Rocks have been described in many regions, and their mode of origin has given rise to much discussion. The typical flinty crush material is so dark and structureless in hand specimens that it might be taken for an igneous rock; and it behaves towards the surrounding rocks in an intrusive fashion. Bands and veins of the flinty crush material traverse the country rocks in all directions, sometimes resulting in the production of a pseudo-conglomerate. In the southern islands of the Outer Hebrides the flinty crush phenomena are found in association with crush zones and shearlines, running in definite directions. The fragments of gneiss and pegmatite in the pseudo-conglomerates are sometimes so well rounded as to suggest corrosion, and are themselves shot through by the fine dark material of the matrix in which they lie. Under the microscope, evidence is afforded of all stages in the breaking down of the gneisses, and the partial fusion of the mashed and ground down materials; followed at places by subsequent incipient crystallization. Beautiful examples of fluxion structure are seen in the streaking and banding of the fused or partially fused matrix, with eddies and invasions of portions of the viscous paste into each other. Examples also occur of the development of abundant spherulites, and more rarely of felspar microlites arranged in radial groups. The behaviour of the material in the field, together with its macroscopic and microscopic characters, points to the conclusion that this peculiar rock is the product of mechanical stresses, which at places have raised the temperature to an extent sufficient to bring about partial fusion of the crushed gneisses. There is no evidence in the Outer Hebrides that these phenomena are the result of earthquakes caused by deep-seated explosions, accompanied by the outrush of incandescent gases.

OBITUARY.

Henry Keeping.

BORN FEBRUARY, 1827. DIED JANUARY, 1924.

The death of Henry Keeping on 31st January, within a few weeks of his ninety-seventh birthday, removes one of the few remaining links with the great geologists of the earlier half of the last century. Though well known to many of the present older generation, he had lived in retirement for some years.

Born at Milton, in Hampshire, his attention was directed at an

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early age to the fossils of the Tertiary strata of the Hampshire Basin, of which he became a keen collector. He was employed for this purpose by the Marchioness of Hastings and by the Rev. Osmond Fisher, while in 1864 Professor Sedgwick appointed him Curator of the Woodwardian Museum, and this post he retained till his retirement in 1911. During these years he made frequent field expeditions and collected largely, not only from Tertiary strata, but also from other deposits, including the Olenellus beds of Shropshire. The magnificent collection of Tertiary fossils in the Sedgwick Museum owes much to his labours, and as a collector he was perhaps unrivalled.

But he was more than this. His eye for new species among the Tertiary fossils was unerring, and he contributed several papers to various scientific journals, chiefly on the Hampshire Basin, but also on Mesozoic deposits around Cambridge.

He was a sociable man and interested in many matters outside his own special domain. A few years ago he published a short autobiographical sketch entitled *Reminiscences of My Life*. This not only records the chief events of his career, but gives an insight into his character.

His son, Walter Keeping, who predeceased him by many years, was also a well-known geologist and palæontologist, and for some time was Professor of Geology at Aberystwyth.

Professor F. Omori.

BORN 1868. DIED 8TH NOVEMBER, 1923.

For the last thirty years we have grown accustomed to the constant stream of papers from the full-stored mind of Professor F. Omori. Numerous as the papers were, there was not one of them that did not add to our knowledge of earthquakes and volcanic phenomena, and some of them have taken an honourable place among the contributions that seem likely to last for generations yet to come. Among these may be mentioned his memoirs on the after-shocks of earthquakes, a subject which he made his own, the distribution of Japanese earthquakes in time and space, and the remarkable eruptions of the Usu-san, Asama-yama, and Sakura-jima. In a country like Japan, and to one in his official position—he was Professor of Seismology and the leading member of the Imperial Earthquake Investigation Committee—it was only natural that he should give close attention to the vibrations of buildings and various engineering structures during earthquakes. One of his latest papers dealt with the effect of semi-destructive earthquakes on the new steel-brick buildings in Tokyo, and his conclusion that they might be trusted to withstand the fiercest shock was amply confirmed on 1st September last. On that day he was absent from Tokyo, but he returned shortly afterwards, and died on 8th November at the age of 55, after spending more

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