

With regard to the angle of the cliff-slope, my observations entirely confirm Mr. Carus Wilson's opinion that the cliffs are steeper now than formerly.

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#### NOMENCLATURE OF THE HEAVY LIQUIDS.

SIR,—In dealing with laboratory methods for the separation of minerals of different densities, some writers speak of Klein's solution, Brauns' solution, Rohrbach's solution, and Sonstadt's (or Thoulet's) solution. Others use the chemical names of the fluids—cadmium borotungstate, methylene iodide, etc. This double nomenclature is confusing and a tax on the memory, and it would be well if one or other set of names were adhered to and the other abandoned.

In the case of the double iodide solutions, the personal name has the advantage of brevity over the chemical. The desire to give honour where honour is due may also incline some workers to its use. But in this respect we are far from consistent. Bromoform, the most generally useful of all the heavy liquids, might with justice be called Schroeder van der Kolk's liquid. Moreover, Professor Brauns was not the discoverer of methylene iodide, he was merely the first to describe its application to mineralogy; and some of the other authors have even slighter claims to the liquids with which their names are associated.

The chief objection to the personal name is that it has no intrinsic relation to the fluid and suggests none of its properties. The chemical name, on the other hand, specifies the composition of the fluid referred to, and so recalls to mind its physical properties. The chemists will not be persuaded to call methylene iodide Brauns' solution, though they are not free from a similar practice (e.g. Fehling's solution, Condy's fluid, etc.). It would be a good thing if mineralogists would avoid the needless duplication of names and always use the chemical instead of the personal names for the heavy liquids.

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## OBITUARY.

### Walter R. Billings.

THROUGH the death of Mr. Walter R. Billings, Canada has lost a citizen of unusual attainments. His death occurred at his home in Ottawa on March 1, in his 71st year. Mr. Billings was an architect by profession and a palæontologist by natural taste and inclination.

Although palæontology was an avocation that he actively followed during only a portion of his mature life, the work which he has left forms a substantial and valuable contribution to the science.

The ancestry of Walter R. Billings on the paternal side was rather complex, including Welsh, English, Scotch, and Irish elements. His grandfather was born in Massachusetts, his grandmother in New York. Braddish Billings, grandfather of Walter, was the first white settler in Ottawa, where he came when there was nothing to suggest the future city, which developed later over a part of the 1,000 acre tract of land which he acquired. Walter R. Billings was a nephew of Elkanah Billings, the distinguished first palæontologist of the Canadian Geological Survey. To palæontologists the death of the nephew will recall the birthday of palæontological science in Canada, which may be said to coincide with the publication of Elkanah Billings' first paper on the Cystidea. To this able and remarkable man Canadian naturalists owe a debt of gratitude for starting at his own expense the first magazine devoted to Natural History published in Canada.

With such a sponsor in E. Billings, it is small wonder that palæontology made a strong appeal to the subject of this sketch. Inspired no doubt by the work of his uncle, Walter R. Billings became an ardent collector of fossils. That his collections came to include many rare and beautifully preserved specimens is sufficiently attested by the published references to them of foreign palæontologists. Dr. Bather, of the British Museum, has referred to many of the species collected by W. R. Billings. His generous spirit led him to loan his collections freely to those prepared to make use of them, and some of his rarest specimens were presented to the British Museum.

His own published studies were confined chiefly to the Crinoidea, and he is known to students of this group for his valuable work on the Trenton crinoidal fauna of Ontario.

Many important additions to the knowledge of the Crinoidea have been made by Dr. Bather from studies of material collected by W. R. Billings. He was always ready to place at the disposal of visiting geologists his intimate knowledge of collecting localities in the Ottawa district. The valuable collection of fossils left by him has been presented to the Canadian Geological Survey by his sisters, in accordance with his wishes.

He was a man of broad interests and for many years took a keen interest in athletics, especially in the water sports for which Ottawa is noted. Many of his vacations were spent on his luxuriously furnished house-boat. He represented a type of man far too rare in Canada, but more common in England, who finds the time and shows the ability to make worthy contributions to pure science while following a profession in no way allied to the science in which he delves.

E. M. KINDLE.