CORRESPONDENCE.

SOLUTION THEORY OF VALLEY FORMATION.

SIR,—In the December number of the GEOLOGICAL MAGAZINE there appeared a short article by Mr. Jukes-Browne on the subject of the solution theory of valley formation as applied by the Rev. E. C. Spicer to the area of the Glyme and Dorne. It seems to me that there are several points in this paper that demand some attention.

It is said that Mr. Spicer's proposition "assumes that the rocks of the district are traversed by a double set of joints which coincide approximately with the winding of the streams, but no evidence is adduced to prove that this is actually the case, and his own map shows that the windings of the Glyme and Evenlode are so irregular that they cannot be reduced to the intersection of two sets of lines. This map is reproduced, so that the reader can judge for himself". I have studied the map in question, and also traversed the ground several times, twice under the guidance of Mr. Spicer. Though the map was not drawn with that intention, it seems to me to show very clearly the tendency of the Evenlode, Dorne, and Glyme to twist in right angles, and so indicate a set of lines which may well coincide with joints. It is a very suggestive fact that where the Evenlode runs across the Lias this tendency appears to vanish.

No one who looked at the question impartially would expect to find a network of joints accurately indicated by valleys in such an 'advanced' stage as those of the Evenlode, Dorne, or Glyme. The right angles are practically gone from the Cherwell Valley, but are very characteristic of many of the valleys in the area under discussion which are still dry, and are shown by such 'embryo' solution valleys as may be seen near Wooton and (outside the area) at Cuddesdon.

A little further on we read that "on this [Mr. Jukes-Browne's] view it is easy to understand why there is only one valley system, but if Mr. Spicer's theory were correct we ought to find traces of an ancient system of mechanically formed valleys which did not coincide with the subsequently formed 'solution valleys' ". We do find traces of such a system. The most noticeable instance is described by Mr. Pocock in the Geological Survey Memoir on the country round Oxford, under the name of the 'Wilcote Valley' (p. 92). While the covering of Oxford Clay was still nearly continuous over the area, the Windrush joined the Evenlode near Ashford Mill, a fact which is of great importance in considering the 'misfit' of the Evenlode. As the clay was removed a solution valley was developed which finally broke into the Windrush Valley and led it into the present course past Witney. But the pre-solution mechanically formed valley between Wilcote and Northleigh remains, flanked on the south by the outliers of Oxford Clay alluded to by Mr. Jukes-Browne.

The part played by landslips in the formation of valleys has certainly received little attention. That many of the chalk valleys are frequently widened by small slips no one who knows them will deny; it is possible, too, that slips may occasionally serve to lengthen such valleys, but for obvious reasons they can neither initiate nor deepen them.

Mr. Jukes-Browne has pointed out that the solution theory requires (1) a previous series of valleys formed in the clay, which has now largely disappeared, by mechanical surface action, of which series we might expect to find traces; (2) that there should be some indication in the present valleys, supposed to be due to solution, of two sets of joints in the limestones.

I have endeavoured to point out that we find both of these requirements in the Evenlode–Glyme area.

C. N. Bromehead.
University Museum, Oxford.
January 19, 1909.

OBITUARY.

GEORGE HENRY KINAHAN, M.R.I.A.

Born December 19, 1829. Died December 5, 1908.

(PLATE V.)

We regret to record the death at Fairview, Dublin, in his 79th year, of G. H. Kinahan, one of the most distinguished of Irish geologists. The son of Daniel Kinahan, M.A., Barrister-at-Law, he was educated at Trinity College, Dublin, and having qualified as a civil engineer, in 1853 he had conferred on him the Diploma in Engineering of the University. His first professional engagement was on the staff employed on the viaduct which spans the Valley of the Boyne at the harbour of Drogheda, on behalf of the Dublin and Belfast Junction Railway Company, now merged in the Great Northern Railway. Sir John Macneill and James Barton were the chief engineers. This lattice-bridge was the second of its kind built in Ireland. In 1854 Kinahan was appointed to the Irish Branch of the Geological Survey of the United Kingdom, under Sir Roderick I. Murchison, K.C.B., Director-General, Professor J. Beete Jukes being then the Local Director for Ireland. He was promoted Senior Geologist in 1861, District Surveyor in 1869, and retired after thirty-six years service in 1890. His official work extended to almost every county in Ireland, and his name appears on twenty-six of the official "Memoirs of the Geological Survey of Ireland". He was a voluminous writer from the time he joined the Survey. His contributions to the Journal of the Geological Society of Dublin (afterwards the Royal Geological Society of Ireland) extend from 1859 to 1889, articles from his pen appearing in every volume during these years; and he delivered as President the Anniversary Addresses in 1880 and 1881 before that Society. He was a member of the Council of the Royal Irish Academy and a contributor to its Proceedings.

As an archæologist he contributed many papers on Crannoges, Megalithic monuments, and other cognate subjects to the Kilkenny and South-East of Ireland Archæological Society and to the Royal Historical and Archæological Association of Ireland. Other papers by him were published by the Geological Societies in Edinburgh, Manchester, Liverpool, and Glasgow; by the Institute of Civil Engineers, Ireland, and the North of England Institute of Mining and Mechanical Engineers. The British Association, of which for many years he was one of the General Committee, received his last written article for the 1908 meeting in Dublin, on the "Raised Beaches of the