

LIVERPOOL GEOLOGICAL SOCIETY.

April 13, 1920.—Mr. W. T. Walker, B.Sc., F.G.S., President, in the chair.

The following papers were read :—

1. "The Bellevalle Borehole." By F. T. Maidwell, F.G.S.

The boring was made in 1919 by the Widnes Corporation for water at Bellevalle, Little Woolton, close to the Liverpool city boundary, and reached a depth of 704 feet below the surface. Full details were given of the strata penetrated, which were almost entirely of Middle and Lower Bunter Sandstones.

2. "Coastal Changes at the Mouth of the Alt." By C. B. Travis.

The encroachments of the sea on the Cheshire and Lancashire coasts of the Mersey have attracted considerable attention during the past few months, and particularly on the northern shore of the estuary, where the spectacular feature of the menace of destruction of a number of fine detached residences at Hall Road has created much popular interest. The erosion which has taken place in the latter locality has been the subject of continuous detailed observations by Mr. Travis, who has carried out a series of surveys during the last twelve months dealing with the position of the River Alt on the foreshore, and of the changes of the high water-mark of the tides at various periods since 1893. Contrary to general supposition, the advance southward of the River Alt is no new feature, but brings part of the series of oscillations to which this river between Hightown and Waterloo has been subject over a very long period. By reproductions of old maps and charts, and recent surveys, the striking changes in the position of the outlet channels of the river during the last three centuries were illustrated, and it was shown that no periodicity can as yet be definitely established in relation to these fluctuations.

Details of the recent erosive effects and calculations of the loss of land suffered along this part of the South Lancashire coast, particularly during the past seven years, were given. The accretion of blown sand which has taken place along other parts of the same coast contemporaneously with the erosion was referred to, and the noteworthy gain of land by natural and artificial means in the neighbourhood of what is now the Altcar Rifle Range, and the formation and development of the salient of accretion known as Formby Point, since the seventeenth century, were described.

CORRESPONDENCE.

GAULT AND LOWER GREENSAND NEAR LEIGHTON BUZZARD.

SIR,—Although it would be easy to reply in detail to Mr. Lamplugh's letter on this subject, published in your issue of last month, we have no desire to do so. We are satisfied that a careful

perusal of our recent paper provides the most convincing reply; and since our method of attacking the problem differs so widely from that adopted by Mr. Lamplugh, we feel that a controversy would be fruitless.

F. L. KITCHIN.

J. PRINGLE.

LONDON.

May 12, 1920.

SIR,—Although the subject of the Bournemouth Chines is chiefly of local interest, as Mr. Bury in his paper in the February number has referred several times to my views, may I be permitted a few words in reply?

Mr. Bury's paper chiefly deals with the seaward aspect of the chines, and curiously he omits mention of the one determining feature which is common to all the chines, and more than anything else is responsible for their form, depth, contour of sides, and angle of recession in cliff-face. This is the position, thickness, and number of the clay-beds which occur in the friable sandy strata from which the chines have been carved by the action of land water. In thirty years residence in the town I have more and more been struck by this, and led to attribute less and less to sea action at the cliff-face.

If any visitor will examine the shorter and lesser chines, such as Honeycombe Chine, east of Boscombe pier — which is not mentioned by Mr. Bury—also Middle Chine, Little Durley Chine, and Canford Cliff Chine, they will readily admit the influence of this factor. That the larger chines—Branksome, Bourne Valley, and the mouth of the Bourne, and probably Boscombe Chine—are remains of the old Solent River drainage system cannot be doubted. But all have been deepened and widened since the sea invaded Bournemouth Bay, by the action of land streams causing constant washing out of sand and slipping of clay-beds as they were uncovered.

I have never thought it necessary to invite the aid of glaciation or a hypothetical coombe-rock to account for what is otherwise easily explained. At the close of the Glacial period and the beginning of Neolithic times, floods from the melting of ice-sheets further north first eroded the surface and then deposited the sheet of plateau gravel which we find covering the strata around Bournemouth to-day. This occurred when the Bourne Valley was half its present depth. The plateau gravel is found in places down what Mr. Bury considers the old valley level in Branksome and Alum Chines. The present chine level has been formed since the close of the Glacial period. The Solent River system had been destroyed long before this, almost immediately on the sea breaking through the range of chalk hills which soundings show must have occurred not far east of Ballard Down, the period being either during or just before the raised beaches were formed.

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, Condry'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.

G. M. DAVIES.

17 ELMWOOD ROAD, CROYDON.
May 4, 1920.

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.