

gravels, all these beaches are ranked in the scheme as newer than the Chalky Boulder-clay. But the only Infra-glacial beach that is known to occur within the region of the Chalky Boulder-clay, viz. that which is at times clearly exposed at Sewerby on the Yorkshire coast, is left entirely out of the reckoning. Thorough investigation of this beach by digging and borings in 1887–90 enabled me to show that it was older than the oldest ('Basement') Boulder-clay of the Yorkshire coast, which is at least as old as the Chalky Boulder-clay. Further, there can be no doubt that the Infra-glacial beaches of the South of Ireland, with which I am well acquainted, are of practically the same age as the Sewerby beach and stand in the same relationship to the glaciation. There seems every reason, also, for supposing that the Infra-glacial beaches of South Wales belong to the same period.

If Mr. Dewey be right in his correlation of the beaches of Devon and Cornwall with those of the South of Ireland, it would follow that they are older than the Chalky Boulder-clay, and not newer. But, in the absence of Boulder-clays south of the Bristol Channel, the correlation has still an element of uncertainty. Deposits of the character of 'Head' and 'Combe Rock' are unsatisfactory materials on which to base conclusions as to time-divisions of the Glacial period, since it is clear that rubbles of this type were being formed locally throughout the period in areas not covered by ice. In Yorkshire, though the chief masses occur beneath all the Boulder-clays, the rubbles are by no means confined to this horizon.

G. W. LAMPLUGH.

ST. ALBANS.

April 13, 1913.

SEA-WATER AND CRITICAL TEMPERATURES.

SIR,—I certainly have never written a paper with the actual title referring to critical temperatures, but very much of my life has been spent in promulgating the view of the solubility of H^2O in fused silicates and laying down the fundamental principles of varying volcanic action based upon that as illustrated in fragmentary ejecta. Neither the critical temperature of water nor the spheroidal state has anything to do with the question, which, I have always maintained and repeat, depends on the critical temperature and pressure of solution of gaseous oxides (H^2O), etc., in fused liquid oxides and silicates.

Curiously enough, my views have never been much referred to in England, but are very generally accepted by Continental geologists, which, if we are to believe Mr. A. R. Hunt, means that English geologists read very little either the researches of their own countrymen or those of foreigners.

Nine of my papers in the list mentioned by Mr. Hunt refer to the subject under discussion, and I am now sending him a new list up to date of 161 papers, in which four others treat of the same question.

H. J. JOHNSTON-LAVIS.

BEAULIEU-SUR-MER, FRANCE.

April 7, 1913.