

NOTICES OF MEMOIRS.

I.—THE GEOLOGY AND EXTINCT VOLCANOS OF CLERMONT,
AUVERGNE.¹

By RICHARD G. SYMES, F.G.S.

MR. SYMES having visited this district in the summer of 1870, in company with Mr. Leonard, gives us an interesting paper, the results of their observations on the Plutonic, Aqueous, and Volcanic rocks. The country chiefly examined was that between four and five miles west of Clermont. The granite is described as generally consisting of two micas (margarodite and lepidomelane, the latter predominating in nearly every case over the former), one felspar (oligoclase) and glassy quartz. It was found to decompose the more readily as it approached Volcanic rocks. The Aqueous rocks, of Upper Eocene or Miocene age, are briefly described as consisting of grits, marls, and indusial limestone or travertin. The grits are for the most part composed of the débris of granite and basalt, bound together by a siliceous cement. Mr. Symes obtained a specimen containing a well-rounded pebble of basalt: a fact of some importance, as Scrope and Lyell remark that no traces of volcanic rocks occur in these beds. In regard to the volcanic phenomena, the inferences drawn are: that the condition to which the volcanos are referable is that in which eruptive paroxysms of intense energy alternate with lengthened periods of complete inertness; that the cinder cones, Domitic hills, and recent lavas are all due to one violent paroxysm spread over an area twenty miles long by two broad; that the presence of two such different rocks as basalt and trachyte, in close juxtaposition, can only be accounted for on the supposition that the rocks from which they are derived, namely, hornblende rock and some highly felspathic rock, such as granite, were in contact prior to their being reduced to the forms we now find them in; that the granite plateau was very much in the same condition prior to the deposition of the lacustrine strata, as it is now; that prior to the deposition of the lacustrine strata, this district was probably the seat of volcanic eruption.

II.—ON EHRENBURG'S FORAMINIFERA FROM THE CHALK OF MEUDON,
FRANCE.

By Prof. T. RUPERT JONES, F.G.S., and W. K. PARKER, F.R.S.

IN No. 89 of the GEOLOGICAL MAGAZINE, p. 511, we indicated the genera and species of Foraminifera found by Dr. Ehrenberg in the White Chalk of Meudon, near Paris, and figured in his "Mikrogeologie," 1854.

In our list twenty species were enumerated (with the nomenclature now in use) as the result of our study of the fifty-six forms

¹ A paper read before the Royal Geological Society of Ireland, April 12, 1871.

figured and separately named in the plate of Meudon Foraminifera. To render our work more useful to Rhizopodists and Bibliographers, we proceed to take the figures in succession, noting that, as we before stated, the grouping on the plate has a more natural association of allied forms than that shown by the numerical order.

Pl. xxvii., fig. 1, *Miliola ovum* = *Lagena globosa*. 2, *Nodosaria turgescens* is one and a half of the last chambers of a compact variety of the simple *N. ovicula*. 3, *Textilaria striata* (1838); 4, *T. sulcata*; and 5, *T. dilatata* (“*T. brevis?* 1838”), belong to Ehrenberg’s *T. striata*, a subspecies or notable variety, worthy of a binomial term. 6, *Text. globulosa* (1838) is the small or young form of *T. gibbosa*, D’Orb., and for convenience is often referred to by the name given by Ehrenberg. 7a–d, *T. linearis* = *Bolivina punctata*. 8, *Text. aculeata* (“*T. aspera*, 1838, in part”) is a thick-walled form of *Textilaria gibbosa*, produced and aculeate on the edges at the outer angle or base of each chamber, and is conveniently distinguished by the name here given. 9a, b, *Grammostomum pachyderma* (“*Text. aciculata*, 1838, = several thin species of *Grammostomum*”), and 10, *Gr. angulatum*, are specimens of a coarse-shelled *Bolivina punctata*. 11, *Gr. polystigma* = *Text. sagittula*. 12, *Gr. Thebaicum* seems to be an oblong *Textilaria agglutinans* with a growth like that of *T. sagittula*; but *Gr. Thebaicum*, pl. xxiv., figs. 20, 21, certainly appears to be *Bolivina dilatata*. 13, *Gr. platystigma* is *Bol. dilatata*. 14, *Polymorphina asparagus* is *Virgulina squamosa*; so also is 15, *Grammostomum lingua*. 16, *Gr. macilentum* is a very neatly Textilariform *V. squamosa*. 17, *Strophoconus efflorescens* is a rather twisted *V. squamosa*. 18, *Grammostomum* (*Polymorphina?*) *myoglossum* is a fragment of apparently a *V. squamosa* of regular growth. 19, *Loxostomum subrostratum*, and 20, *Lox. rostratum*, are varieties of *Text. agglutinans*, becoming Bigenerine (passing into *Bigenerina*) by the aperture getting more and more terminal in successive chambers (fig. 20 shows the more advanced stage of the transition). 21 and 22, *Lox. aculeatum* is a pouting *Textilaria*, tending towards *Sagrina rugosa*, D’Orb. (*Heterostomella*, Reuss). The aperture is entire (not ragged or prickly, as shown in figures of some *Polymorphinae* in other plates), and lipped, as in *Uvigerina*. The edges of the shell are aculeate by the production of the base of each chamber. See above, p. 508. Fig. 23, *Strophoconus polymorphus* = *Virgulina Schreibersii*. 24, *Str. spicula* = *V. squamosa*; so also 25, *Grammostomum gracile*. 26 and 28, *Strophoconus polymorphus*, and 27, *Str.* (*Grammost.?*) *ovum?*, are *Virg. Schreibersii*. 29, *Proroprorus creta* = *Polymorphina Thouini*. 30, 31, *Grammobotrys? Parisiensis* = *Sphæroidina bulloides*; and probably also 32, *Pleurites cretae*. 33, 34, *Sphæroidina Parisiensis* = (33, probably, and 34, certainly) *Sph. bulloides*. 35, *Guthulina aculeata*, and 36, *Gut. turrita*, are *Verneulina pygmæa*, Egger; but 35 has the outer margins of its chambers more or less aculeate. 37, *Nonionina? ocellata* is *Cristellaria cultrata*. Figs. 38–45 and 47 are various individuals of the neat little variety of *Planorbulina farcta*, known as *Pl. ammonoides*, Reuss, sp., very common in the Chalk. (38a, b, 39, and 40, *Planulina micromphala*

= "*Pl. turgida*, 1838, in part." 41, *Pl. angusta*. 42a, b, *Pl. annulosa*. 43, *Pl. leptostigma*. 44, 45, *Pl. ampla*. 47, *Pl. ampliata*. 46, *Pl. euomphala* is a slightly keeled *Cristellaria cultrata*. 48, *Pl. umbilicata* is *Pulvinulina truncatulinoides*, D'Orb., sp., seen from the upper (flat) surface. 49 and ? 50, *Pl. heteromphala*, seem to be small varieties of *Planorbulina farcta*, approaching *Pl. (Truncatulina) lobatula*; such are not rare in the Chalk. It is difficult to correlate the many small *Planorbulinae* and *Truncatulinae*, from the Chalk, figured by D'Orbigny, Reuss, and Ehrenberg. Fig. 49 is perhaps comparable with D'Orbigny's *Rotalina umbilicata* from the Chalk, which we are inclined to refer to *Rotalia* proper, though with some doubt. 51, *Rotalina umbilicata* is a side view of *Pulv. truncatulinoides*, D'Orb., sp. Not quite so angular in its profile as the recent specimen figured in "Hist. nat. des Iles Canaries, etc. Foraminifères," pl. 2, figs. 25-27. This species is figured also by Soldani, "Testaceographia," vol. i., p. 58, pl. 46, fig. *nn*. It is a variety of *Pulv. Menardii*, and closely related to *Pulv. Micheliniana* and *Pulv. crassa*, both found in the Chalk. See "Philos. Transact.," vol. clv., p. 393. 52, *Planulina picta* = *Pulv. Micheliniana*, D'Orb., sp. See above, p. 510. Figs. 53-58 are young, and 59 an adult, *Globigerina cretacea*, D'Orb., a rather discoidal form of *Gl. bulloides*, D'Orb. Young flattish *Globigerinae* closely resemble young *Planorbulinae*. (53, *Rotalia quaterna*; 54, *R. rosa*; 55, *R. pachyomphala*; 56, *R. globosa-ampliata*. 57, 58, *R. aspera*; 59, *Globigerina cretæ*, referred with doubt to *Gl. bulloides* in 1838.) Figs. 60-64 are young and arrested specimens of *Planorbulina farcta*. (60, *Rotalia globulosa-tenuior* = "*R. Glob.*, 1838"; 61, *R. senaria*; 62, *R. densa*; 63, *R. glomerata* = "*R. senaria*?"; 64, *R. cretæ*, rough-shelled.) Spongiliths and Coccoliths occur among the other figures on this plate.

REVIEWS.

I.—LETTERS AND EXTRACTS FROM THE ADDRESSES AND OCCASIONAL WRITINGS OF J. BEETE JUKES, M.A., F.R.S., F.G.S., late Local Director of the Geological Survey of Ireland. Edited, with connecting memorial notes, by his Sister. London: Chapman and Hall. 1871. pp. 596. 8vo. With a Portrait.

AS in military service, "the place of honour is the place of danger," so in Science, the men who by their earnest labours occupy its foremost ranks, acting as pioneers to smooth our path, are likewise risking their lives for us, and not unfrequently pay all too dearly for the transitory honours they enjoy.

For Professor Jukes—whose memory, so dear to geologists, this book is intended to keep alive,—may certainly be claimed the merit of having been always *at the front*. From the time he left Cambridge, when, inspired by Professor Sedgwick's zeal, he set forth on foot to walk through the length and the breadth of England geologizing; he began to teach others, and we find him lecturing first in one town and then in another, often to crowded audiences; for, what-