"Glimpses of Australian Bird-life" is a praiseworthy attempt to encourage the study of the avifauna of the island-continent among field naturalists. The photographs, although on a small scale, are for the most part excellent, while Mr. Robert Hall's brief explanatory notes are (as might be expected) very much to the point. One of the most interesting species depicted is the whip-bird (or coachwhip-bird), while from the point of view of excellence in technique, special mention may be made of the portrait of the so-called reed-warbler and its nest. R. L.

NOTES ON RECENT PETROGRAPHY.

STUDENTS of the processes of sedimentation and of flocculation in clays should not overlook the three papers on sands and sediments, by Messrs. Mellard Reade and Philip Holland, that have been published in the Proceedings of the Liverpool Geological Society. The original analyses of sediments given in the second paper (vol. x., part i., 1905), and in the third now issued (1906), are distinctly valuable. Some of the specific gravities stated for clays seem a little high; but it must be admitted that we possess as yet far too little knowledge of our commonest sedimentary deposits. In vol. x., part ii. (1906), p. 136, the authors point out that "the experiments have, we think, demonstrated the existence of a mass of matter of unsuspected granular minuteness distributed throughout the sedimentary rocks of the earth. . . . We have strong grounds for thinking that the distribution of the finest sediment, in the form of what we may call quartz-dust, is oceanic." The abundance of quartz grains in some rocks popularly classed as argillaceous, such as "slates of coarse texture" (p. 156), is of course already familiar to agricultural investigators.

Mr. H. W. Nichols, in describing new forms of concretions (Field Columbian Museum Publications, Geological Series, vol. iii., No. 3, 1906), usefully brings to the front Forchammer's determinations of magnesia in the skeletons or shells of marine organisms, which were originally published in 1849. Mr. Nichols supports these by analyses of his own (pp. 48–9), *Corallium rubrum* giving him 9·32 per cent. of magnesium carbonate. Forchammer's Mediterranean Serpula yielded as high a figure as 7·64 per cent. The Zoantharia examined give only from 0·35 per cent. to 0·54 per cent.

Messrs. Allen, Wright, and Clement have experimentally investigated the minerals of the composition $MgSiO_3$ (*American Journal of Science*, vol. xxii., November, 1906), and have produced artificially the two pyroxenic types, monoclinic and rhombic, and the corresponding two amphibolic types. At atmospheric pressure (p. 415), the monoclinic pyroxene, $MgSiO_3$, a rare form in nature, is found to be the product of crystallisation from solvents; the material used for this experiment may be any of the forms of crystalline $MgSiO_3$. All the other forms of magnesium silicate (p. 437) pass into the monoclinic pyroxenic form at temperatures between 1150° and 1300°, depending on the crystal-form employed. Enstatite crystallises at lower temperatures than the monoclinic pyroxene. The amphibolic types have been produced by a rapid cooling, which, as the authors point out, is not likely to be the prevailing cause of their occurrence in natural rocks.

Mr. H. I. Jensen, in dealing with the volcanic area of the East Moreton and Wide Bay districts, Queensland (Proc. Linnean Soc. of New South Wales, 1906, p. 73), describes a number of trachytes containing riebeckite, some of which form important plugs or domes. Trachytes, as well as basalts, are recorded from Gough Island, in the South Atlantic, by Messrs. Pirie and R. Campbell (Proc. Royal Physical Soc. of Edinburgh, vol. xvi., 1906, p. 258). Mr. I. G. Sundell (*Bull. Comm. géol. de Finlande*, No. 16, 1905), writing in English, or American, affirms the importance of cancrinite as "a very abundant and doubtless primary constituent" of the syenites of the parish of Kuolajärvi in N. Finland. His paper, like many others from various parts of the world, shows the strong influence already exerted by the Chicago system of classifying igneous rocks.

Mr. G. K. Gilbert (Bull. Geol. Soc. America, vol. xvii., 1906, p. 321) discusses gravitational assemblage in granite, citing striking cases from the Sierra Nevada, where large crystals of felspar and hornblende have respectively assembled in aggregates in granite. An example of banded granite, where bands rich in hornblende and mica alternate with others rich in felspar and quartz, suggests to the author successive sedimentation. Unconformities occur in the banding (p. 324), a dark band always forming the base of the upper series, and truncating obliquely the edges of previous bands. Mr. Gilbert puts forward the view, as a hypothesis, that a pair of bands represents a unit of deposition from the original magma, gravitation playing a *rôle* in the process.

Mr. R. A. Daly, of Ottawa, whose work in the field of igneous absorption and intermingling is well known, states his case of the Moyie Sill in the Purcell Range with effective lucidity in the *Festschrift zum siebzigsten Geburtstage von Harry Rosenbusch* (Stuttgart, Schweizerbartsche Verlagsbuchhandlung, 1906). His contribution is entitled "The Differentiation of a Secondary Magma through Gravitative Adjustment," and his argument for the assimilation of a felspathic quartzite-series by a gabbro-magma is supported by a number of chemical analyses. A granite zone intervenes between the gabbro and the overlying part of the quartzite-series, and the author holds that (p. 225) "there is clear chemical proof that the greater proportion of the elements in the granite could have been derived directly by fusion of the quartzite." The gabbro, in its onward passage, absorbed beds of quartzite, but (p. 228) "simultaneously gravitative adjustment has nearly restored the original composition, as the acid, assimilated material rose through the denser gabbro magma to the top of the sill." We need not subscribe as yet to Mr. Daly's view (p. 233 and previous papers) that the pure igneous magma in the earth's crust is of basic composition, since there may be a variety of pure magmas in a variety of localities; yet we believe that there is much soundness in his concluding sentence:—"The fact of 'consanguinity' among the igneous rocks of a petrographical province may be due as much to assimilation as to differentiation." G. A. J. C.

ARCHÆOLOGY IN ITALY.

THE final rejection by the Italian Government of Prof. Waldstein's well-advertised project for an international excavation of Herculaneum gives the Rome correspondent of the *Times* food for reflection with regard to the alleged Chauvinism of Italian archæologists, who will allow no foreigner to take part in Italian excavations, notwithstanding the fact, which they admit freely enough, that Græco-Roman antiquity is the property of the whole world, and not of Italy alone. While admitting that the postponement of the excavation of Herculaneum until such time as Italy can do it by herself does not much matter from the scientific standpoint, since "the treasures which lie beneath Resina are in safe keeping, and might remain undisturbed for centuries," the correspondent remarks that this is by no means the case with regard to other sites, which cry aloud for speedy excavation, for valuable evidence is in their case being destroyed daily by the "march of modern improvement." To do the work, Italy can muster neither sufficient money nor sufficient men, especially the latter. Yet she will not invite foreign aid, which would willingly and gratefully be given by archæological students all over the world. As the *Times* correspondent is obliged regretfully to admit, "The foreigner is at liberty to pay his *lira* for admission to museums and other places; he may even give a round sum for the completion of some work in which he is interested, as long as he does not wish to help in carrying it out himself; he may turn his talents to such use as advertising the achievements of Italian archæologists or translating their books into another language; he may show an intelligent and devoted interest, but it must be from a discreet distance. That, at least, seems to be the moral of all the recent relations between Italy and other countries in the archæological questions which have come to the front during the last twenty years or so. One would willingly believe it otherwise; one would gladly put a more literal and liberal interpretation on their professions of confraternity; but how is it possible