

tracts from Fischer, finds no place in it, though here and there an isolated fact is planted side by side with some crude observation of the first quarter of this century. Thering's classification, the most pregnant and suggestive (if not the most successful) attempt in many years, is not even mentioned. There is shown no grasp of the subject; and, on contested questions of importance, the treatment recalls a man in a menagerie poking up the animals through the bars. Errors of fact and of the types could be cited in abundance; but it is not necessary to descend to small details; the real fault is with the architecture, not with the bricks.

THE PARIS METEORITES.

Guide dans la collection de météorites du Muséum d'histoire naturelle. Paris, Masson. 1882. 40 p. 8°.

THIS little work of some forty pages is valuable as giving in brief the results of the extended studies upon meteorites by Prof. A. Daubrée and his assistant Dr. Stanislas Meunier. Besides furnishing a catalogue of all the specimens to be found in the collection, three hundred and six in number, it discusses the origin, characters, classification, etc., of meteorites. These are regarded as having a common origin, and possessing types corresponding to rocks and structures of terrestrial origin, i.e., to lavas, dunite, lherzolite, serpentine, breccias, pumice, metallic veins, metamorphic rocks, etc. The classification is one which, in its simpler divisions, has been well received, but in the minor subdivisions is but little known; hence it is a matter of interest to place this classification in its latest phase before our readers.

METEORITE.

I. HOLOSIDERITE.

Octibbehite, tazewellite, nelsonite, catarinite, braunite, caillite, schwetzerite, jewellite, campbellite, burlingtonite, tucsonite, lenartite.

II. SYSSIDERITE.

Pallasite, atacamaite, brahinite, deesite, lodranite.

III. SPORASIDERITE.

1. *Polysiderite*. — Toulite, logronite.
2. *Oligosiderite*. — Aumalite, chantonnite, aiglite, montrejite, parnallite, luceite, canellite, mesminite, belajite, butsurite, manbhoomite, banjite, limerickite, menite, bustite, richmondite, tieschite, erxlebenite, quincite, stawropolite, tadjerite, rutlamite, renazzite.
3. *Cryptosiderite*. — Howardite, ornansite, chladnité.

IV. ASIDERITE.

Igastite, rodite, eukrite, shalkite, chassignite, bokkevellite, orgueillite.

The principal divisions, as will be readily seen, are based on the presence or absence of iron, and its relations to the associated sili-

cates when they are present. The subdivisions are named from the localities at which the specimen chosen as a type happened to fall. It is unfortunate that the bibliographical index, professing to give the principal works relating to meteorites, should be so very imperfect, — giving only *eight* works and papers, omitting such as the classical publications of Chladni in 1819, Schreibers, and Partsch, and the more recent ones of G. Rose, Shepard, Clark, Harris, Rammelsberg, Kesselmeyer, Phipson, Lawrence Smith, and others.

EARLY ORIENTAL HISTORY.

Histoire des anciens peuples de l'orient; par LOUIS MÉNARD. Paris, 1882. 468 p. 8°.

THIS work contains the outlines of Egyptian, of Assyrio-Babylonian, and of Israelitish history. Parts i. and ii. are profusely illustrated from the monuments. Part ii. (Assyria and Babylonia) covers 102 pages, and discusses in five chapters the region of the Tigris and Euphrates, the primitive times, the Sargonidae, the new Chaldean empire, the monuments, religion, manners, and customs. The author tells in a pleasing way what he knows of these topics; but, unfortunately, he is not a student of Assyriology, nor has he informed himself as to the latest results of Assyrian study. His authorities are the Old Testament, Berosus, and the classic writers and the older generation of explorers and decipherers (Botta, Layard, Rawlinson, Hincks). Of the younger generation, with one or two exceptions, he knows absolutely nothing (Smith and Sayce in England; Halévy, Pognon, and Guyard in France; Schrader, Delitzsch, and others in Germany). Hence he quotes (p. 261) from Berosus the Chaldean legend of the deluge, and points out its similarity to the biblical account, without even mentioning the cuneiform deluge story discovered by the lamented George Smith. On p. 262 he tells us that the name 'Babylon' seems to mean 'gate of god.' Certainly this meaning is above possible doubt. He informs us (pp. 262, 263) that the people of Accad and Sumer are of different race; the former being Cushites, and speaking a language approaching the Semitic tongue, the latter being of the Scythic or Turanian stock. He has evidently never heard of Paul Haupt, who has shown that the peoples of Sumer and Accad spoke the same language with dialectical differences, — a language utterly unlike any Semitic tongue. He says (p. 273) that 1112 B.C. is the oldest date which can be established for the history of Assyria. He should

have added, that, before this time, there is a long line of Assyrian kings, for many of whom the date can be fixed at least approximately. The author informs us that it has been supposed that the person kissing the foot of Shalmaneser on the black obelisk may be Jehu, king of Israel, whose name, he tells us, is mentioned in the inscription (p. 278). The Israelitish face of the kneeling figure, and the fact that the name Jehu (Assyr., *Ya-u-a mar Hu-um-ri-i* = Jehu the son of Omri) stands immediately above the picture, ought to allow of no doubt in the matter. The statement (p. 285) that Shalmaneser, the predecessor of Sargon, is not once mentioned in the cuneiform inscriptions, is incorrect; for he is named in the Eponym canon (III. R. 1. col. V. 1),¹ and at least one other time (cf. George Smith: *The Assyrian canon*, p. 84). The

¹ R. is the usual way of representing the great collection of Assyrian texts called 'The cuneiform inscriptions of Western Asia,' of which Sir Henry Rawlinson is editor. The Roman numeral preceding indicates the volume; the following numerals refer to the page, column, and line.

author gives the conflicting opinions of Lenormant and Maspéro, as to the fate of the rebellious brother of Assurbanipal (p. 301). Assurbanipal's own statement is explicit to the effect that his brother was burned, though the gods are represented as having performed the work (V. R. 4. 46 ff.). It is misleading to say (p. 275) that the Assyrian kings never tried to hold by mild government their conquered provinces; for the later kings at least often bestowed favors on captive princes, not seldom replacing them on the throne. Such cases of inaccuracy and uncertainty might be multiplied. The writer knows too little of recent work in Assyriology, and does not hesitate to express his scepticism as to the way in which Assyrian students read proper names (pp. 271, 301). One who has not studied the language for himself can, of course, not yet write a history of Assyria and Babylonia. The book has the credit of brevity, and gives very well a general impression, but cannot be relied upon in detail.

WEEKLY SUMMARY OF THE PROGRESS OF SCIENCE.

ASTRONOMY.

Transit of Venus observations at Helderberg, N.Y.—Mr. R. H. Tucker, jun., of the Dudley observatory, gave a detailed account of the arrangements for, and results of, his observation of the transit of Venus, at a station established for the purpose on the Helderberg table-land, about thirteen miles westward from the city of Albany. The site chosen was the U.S. coast and geodetic survey, and the N.Y. state survey station, Helderberg; lat. $42^{\circ} 37' 38''$, long. $74^{\circ} 00' 39''$; altitude, 1,823 feet. The cloudiness which prevented the observation of either contact at the Dudley observatory was but partial at the Helderberg station, and a satisfactory view of the second contact was realized. An estimate was also made of the time of the first contact, based upon a comparison of the phase first seen a few minutes later, with diagrams constructed in connection with preliminary practice.

The errors of the chronometers were obtained by heliotrope signals, and powder-flashes from the Dudley observatory, and by sextant observations of the sun. — (*Albany inst.*; meeting Jan. 2.) [80]

Transit of Venus observations at New Haven.—Prof. H. A. Newton described his temporary mounting by which he used the eight-inch Grubb object-glass of the observatory to observe the contacts. Dr. L. Waldo referred to the preliminary drill with the Yale heliometer which the five observers and assistants with that instrument had undergone, and said that the results were extremely satisfactory. The definition was good most of the day, and the instrument and dome was manipulated quickly with no waste of time. He gave the following summary: 24 half sets of 4 pointings each, 10 whole sets of 8 pointings each, 20 single pointings on Venus for its diameter, 10 position measures at ingress, and 6 position measures at egress, with time observations of

the four contacts. Mr. Willson described an arrangement by which he had put a cast-iron cylindrical plate-holder in the eye end of the Grubb telescope, and had projected a mercury horizontal surface, together with the reticule glass lines on each of the hundred and fifty or more photographs he had reason to think would develop well. He also described a ten-foot rod caliper he had used in measuring the plate distance from the object-glass. He used a simple crown lens of about one inch and a quarter aperture, and ten feet focal length.

Mr. Sherman, through the courtesy of the scientific school, used the nine-inch equatorial, and obtained about eighty-seven sets of transits of Venus and the sun's limbs across a system of inclined lines ruled on glass. Professors Van Vleck, Lyman, Wright, and Brewer took part in the discussion following the above papers; and, after describing their own contact observations, referred to the atmosphere of Venus, and in general regarded the want of intense blackness of Venus's disc as an effect of contrast with the sun. — (*Conn. acad. arts sc.*; meeting Dec. 20.) [81]

MATHEMATICS.

Septic transformation.—Mr. Ely has obtained the modular equation for the septic transformation by a purely algebraical process. Aside from the result directly arrived at, the paper is valuable as affording a clew as to the (algebraical) methods of procedure to be followed in obtaining the odd prime transformations of higher orders. — (*Proc. Lond. math. soc.*, 1882.) T. C. [82]

Transformation of elliptic functions.—This paper, by Professor Smith of Oxford, is too important for a brief abstract. On its completion, a proper review will be given of its contents. — (*Mess. math.*, 1882.) T. C. [83]

Curves of any deficiency.—Mr. Buchheim ex-