

d'iculare or lamina papyracea. Putting aside the references elsewhere made to this point in the course of the descriptions of the bone, we must praise the very full account that is given of its relations in the different classes of birds, proving not only that the means of investigation at Dr. Magnus's disposal are extensive, but that he has made excellent use of them.

As an example of the second point, on which we have ventured to criticise Dr. Magnus's work, we may refer to the entire section on the bone to which he has applied the term Paukenbein, or Tympanic, bone, which, in part at least, corresponds to Mr. Parker's Basi-temporal, and the relations of which the latter writer has worked out so well. Its nature is essentially misunderstood by Dr. Magnus, who appears to have drawn his conclusions from heads examined at too late a period of development, whilst he scantily makes any reference to its homologues, so important in determining a difficult and disputed relation of this kind.

H. P.

## OUR BOOK SHELF

*The Elements of Plane and Solid Geometry.* By H. W. Watson, M.A. (Longmans, Green, and Co.)

THIS is one more Text-book of Geometry. It adopts completely the general principles of the geometrical reformers in England, in the classification of the rems according to their subjects, the free use of super-position, the separation of problems from theorems, the art from the science, and the avowedly arithmetical treatment of proportion. It is distinguished from most that have preceded it by its greater length, especially in its treatment of ratios, by its somewhat wider range of illustration, and its comprehending the elements of solid geometry. But the book is disappointing. A well-trained and well-read mathematician, with plenty of experience in teaching, and we imagine plenty of leisure for writing, ought to turn out a better book. In a text-book which does not profess to be original in its matter, the arrangement and manner are of the first importance; and in both these respects the book in our judgment fails, and fails openly. The large number of miscellaneous propositions with which several of the books open give a real confusion to the whole volume. And it would be easy, if space permitted, to show that the arrangement is unnatural in some important points. Moreover, some of the demonstrations are very inelegant, such as Book I., pp. 11, 17, and Book II., pp. 12, 13; indeed the latter pair are more than inelegant.

On the whole, therefore, we believe that the book before us, though not without merit, is not a very valuable addition to geometrical reform. It seems to show very clearly what the reformers must aim at, and take infinite pains to achieve: the establishment and recognition of a standard syllabus of geometry. When this is agreed upon, we shall see better text-books than have yet been written.

*Victoria.* (1) *Mineral Statistics of Victoria for the year 1870.* Presented to both Houses of Parliament by his Excellency's command. (Melbourne: By authority: John Ferres, Government Printer.)—(2) *Reports of the Mining Surveyors and Registrars.* Quarter ending March 31, 1871. (Melbourne: By authority: John Ferres, Government Printer.)

THESE reports are models of what such statistical reports should be; the tables are methodically arranged, easy of reference, and apparently exhaustive; the printing would be creditable even to a London printer. In the former, besides the interesting summary and the appendices, there are fifty-three admirably constructed tables, setting forth the statistics, from every possible point of view, of the

mining operations in all the districts, divisions, and subdivisions of Victoria for the year 1870. Of course the statistics relate mainly to gold, the metal most sought after; but all obtainable information is likewise given with reference to whatever other mineral produces are found in the province—silver, tin, copper, antimony, lead, cobalt, manganese, coal, &c. Every means has been taken to make the statistics reliable, and the result, with regard to gold, is that there has been a falling off of the produce in 1870, as compared with 1869, to the extent of upwards of 40,000 oz., which decrease is largely accounted for by the heavy and unprecedented floods of 1870 interrupting the mining operations, the decrease in the number of mines, and the falling off in the yield of gold from several of the deeper alluvial mines. It is stated that during 1870 several scientific gentlemen volunteered to deliver to the miners gratuitously lectures on subjects connected with mining, but received no encouragement from the district authorities, who seem not to have thought it worth their while to provide a room. The interests of science are, however, by no means neglected. We learn from these reports that during last year more than 800 groups of minerals, rocks, and fossils, were added to the collection of the mining department. Efforts have also been made to obtain specimens of the mineral products of other countries in exchange for native products. Another colony is now likely to reap a rich reward, as already many specimens have been sent both from Europe and America. We are glad to learn that Dr. Von Mueller is preparing a report on the large collection of native fossils which has been made. The second report, for the quarter ending March 31, 1871, is considerably more interesting than the former, in a scientific point of view. Besides full and valuable mining statistics, there are two appendices: (A) "Notes on the Rocks and Minerals of the Owen's District," with a sketch map, by Mr. E. J. Dunn, containing much valuable information on the geology of the district; (B) an interesting paper containing succinct observations on what the author, Ferd. Von Mueller, Director of the Melbourne Botanic Garden, considers a new genus of Fossil Conifer, to which he has given the name *Spondylostrobus*. It is allied to *Cupressinites* of Bowerbank. We are sorry we have not space to copy the author's description. The validity of the genus, Mr. Mueller declares, rests chiefly on the extraordinary development of the columella, if so it may be called; this columellar portion forming indeed the main body of the fruit, the so-called new genus differing in this respect from all other cupressineous genera living as well as extinct. The paper is illustrated by a beautifully executed lithograph, containing several coloured figures, natural size, of the fossil, and also by a plan of the field, and sections of the strata in which it is found. We have much pleasure in commending these interesting, and on the whole, encouraging reports, to the notice both of statisticians and geologists.

## LETTERS TO THE EDITOR

[The Editor does not hold himself responsible for opinions expressed by his Correspondents. No notice is taken of anonymous communications.]

## Pendulum Autographs

HAVING read with much interest Mr. Hubert Airy's communication to NATURE (No. 94), on "Pendulum Autographs," I wish to say a word on the compound pendulum long ago devised, I believe for the first time, by Prof. Blackburn, of Glasgow.

I construct the pendulum as follows:—A piece of soft iron wire, about  $\frac{3}{16}$ th of an inch diameter, is fastened by its ends to two points in the ceiling, and a heavy bob is hung from its middle point. A second wire of the same length is similarly attached to the ceiling and to the bob, so that the wires form two superposed isosceles triangles with the line between the suspension points for their common base. A light deal rod about the same length, more or less, as the distance of the suspension