instance L. 39836, a star which Lalande considered a sixth magnitude.

Different views will be taken with regard to the proper contents of a celestial atlas, intended for general use, and it is not nerefore desirable to be too critical upon this point, but to take, we will say, two extreme uses to which an atlas of the pretensions of Dien's may be applied, first for following a small planet with the aid of a chart professing to contain stars to a less degree of brightness, and secondly, for identifying the naked-eye stars by the general maps including only these brighter stars, an elementary purpose for which an atlas may be quite as readily adapted as a globe. In the former case Dien's maps are not sufficiently filled in to allow of a planet equalling in brightness stars of Bessel's ninth magnitude being identified without some trouble and disappointment, and in the latter case we meet with a failing which is only too common with star-atlases—the outlines of constellations are so prominently drawn as seriously to interfere with, if not entirely to obliterate the naked-eye stars of the lower magnitudes, in using the "Atlas" in the open air. As a model of what an atlas should be in the latter respect, we must still refer to Argelander's "Uranometria," which, in our opinion, has yet no equal for the more elementary uses of such a work.

Among the best features in the new edition of Dien's "Atlas" are the delineation of the southern heavens, in which Brisbane's stars are laid down, the view of the distribution of double and multiple stars by M. Flammarion, the orbits of some of the principle revolving double-stars, and figures of remarkable nebulæ and clusters of stars.

OUR BOOK SHELF

Horticulture. By F. W. Burbidge. With Illustrations. (London: E. Stanford, 1877.)

THIS is one of the series of small handbooks on the British manufacturing industries, edited by Mr. G. Phillips Bevan, of which we have already noticed several volumes. A compact work on practical gardening, to serve as a guide to the amateur gardener and fruit-grower, was much wanted, and this volume to a certain extent supplies the desideratum. After a short chapter on commercial gardening, the author treats of the cultivation of fruit, and of the various descriptions of vegetables and herbs; and then of gardening in its various departments, but more from the economical than from the amateur's point of view. If the owner of a garden wants to turn his bit of land to the most profitable account, he will find Mr. Burbidge an admirable guide; but if he infers from the title of the book that he will obtain from it advice as to the treatment of his pelargoniums, fuchsias, and chrysanthemums, or the management of his hothouses, he will be disappointed. We fancy that information of this kind would commend itself to a larger number of readers than the guide-book information of the exact number of acres in each of our London parks, and the annual cost of maintaining them. The advice as to the culture of fruit and vegetables seems to us very good; but the rather poor woodcuts do not add to the value of the volume.

Mittheilungen aus dem k. zoologischen Museum zu Dresden. Herausgegeben mit Unterstützung der General-direction der königlichen Sammlungen für Kunst und Wissenschaft, von Dr. A. B. Meyer, Director des königlichen zoologischen Museums. Zweites Heft mit Tafel. (Dresden, 1877.)

IN a former volume of NATURE (vol. xiii., p. 464) we have given some account of the origin of this meritorious work, of which the second portion is now before us. Like the former half of the first volume of the contributions the present section is chiefly occupied with memoirs based upon the collections made by Dr. A. B. Meyer during his well-known expedition to New Guinea and the adjacent islands. Herr Th. Kirsch, the entomologist of the Dresden Museum, commences with two articles upon the lepidoptera and beetles collected by Dr. Meyer in New Guinea. Of the former Herr Kirsch enumerates 167 species, of which 133 belong to the diurnal section. Several novelties are described and well figured. The next article is by Dr. Meyer himself, and gives us an account of a large series of Papuan skulls which he collected on the mainland of New Guinea and in the Island of Mysore, in the Bay of Geeldink. The collection, embracing altogether 135 examples, is, we believe, by far the finest of this branch of the human family ever made, and should, we suppose, lead to some definite results upon that somewhat mysterious subject—the differentiation of the various races of mankind by their skulls. A second article by Dr. Meyer relates to the specimens of anthropoid apes in the Dresden Museum. We cannot say that the photographic plates of the stuffed specimens of these creatures are either elegant or likely to be of very great use, but it is satisfactory to have the vexed question of the identity of the celebrated "*Mafoka*" lately living in the Zoological Gardens at Dresden, and long supposed to be a gorilla, finally set at rest, as is done by von Bischoff's article on its anatomy, which follows that of Dr. Meyer. A memoir on the Hexactinellid Sponges collected by Dr. Meyer in the Philippine Seas, in the preparation of which Herr W. Marshall has given his assistance, concludes this interesting volume, of which we may say that it adds materially to the status of the Dresden Museum, and to the scientific fame of its energetic director.

LETTERS TO THE EDITOR

[*The Editor does not hold himself responsible for opinions expressed by his correspondents. Neither can he undertake to return, or to correspond with the writers of, rejected manuscripts. No notice is taken of anonymous communications.*

The Editor urgently requests correspondents to keep their letters as short as possible. The pressure on his space is so great that it is impossible otherwise to ensure the appearance even of communications containing interesting and novel facts.]

The Radiometer and its Lessons

I AM obliged to ask you to allow me to add a few words, by way of further explanation, to my letter printed in NATURE, vol. xvii. p. 80.

In trying to estimate the effect of the communication of heat between a solid body and contiguous gas, I have assumed that certain simplifying suppositions may be legitimately made, for the most part identical with what are very commonly adopted in discussing the pressure exerted by a gas on a solid in contact with it. That is to say, I have assumed, first, that we may resolve the velocities of the molecules of gas into three rectangular components, one perpendicular to the surface of the solid and the other two parallel to it; second, that we may conceive of the whole number of molecules as divided into three equal parts, one-third moving in the direction of each of the resolved components of the velocity respectively; third, that the mutual pressure between the solid and the gas, and any communication of heat from one to the other, may, for the purpose in hand, be attributed to *direct* impacts of molecules against the solid surface; fourth, that all the molecules endowed with a velocity perpendicular to the solid surface, and contained within a layer adjacent to this surface of a thickness not greater than the mean length of path, will strike the surface, while none of those which are outside this layer will ever reach it; fifth, that the particles which have struck the solid surface will return from it with an average velocity corresponding to the temperature of the surface, and will retain this velocity until they arrive at the farther side of the layer before-mentioned. It was on the supposition that these are legitimate assumptions that