of discursive material upon vital statistics; and a host of elementary hygienic facts with which every sanitarian is conversant,—are none of them points it can ever be necessary for the health officer to carry about with him for hasty reference.

The most useful sections, and those which most justify the *motif* of the book, are the following:—Those which deal with mathematical problems, and set forth useful algebraical and trigonometrical formulæ, together with a few logarithm tables; that upon demography and vital statistics; and the serviceable abstract of sanitary law, in which corresponding or similar sections of the Public Health Act, 1875, and the Public Health (London) Act, 1891, are considered side by side.

There is very little in the book which is not correct and up to date, save that which refers to the subject of water analysis. This contains many errors, and, since the utility of its introduction is very questionable, it is regretable that it mars the all-round accuracy of the work. In this section Dr. Willoughby gives several results of his own analyses, and those who are familiar with the subject will find their experiences much at variance with the writer's.

In what he calls a typical sample of *rain-water* he found 0·63 grains per gallon of nitrates as HNO_3, and 0·114 and 0·172 parts per million of "ammonia" and "albuminoid ammonia" respectively; in *river-water* at Latchford he found no nitrates, not even a fraction of a part per million, and the "ammonia" and "albuminoid-ammonia" were 0·08 and 0·16 (parts per million) respectively. Loch Katrine water is, moreover, credited (and Wanklyn is quoted as the authority) with 0·008 parts per million of "albuminoid-ammonia," and with 0·004 of "ammonia;" and the former is said to correspond to 0·0056 grains per gallon!

While unquestionably the work contains some material which will make it useful to the health-officer, the health student will find much in it which he may peruse with advantage.

Engler's Botanische Jahrbücher für Systematik, Pflanzengeschichte und Pflanzengeographie. (Leipzig: W. Engelmann.)

SINCE Dr. A. Engler's appointment to the post of Director of the Berlin Botanical Garden and Museum, this periodical has become the organ of the very active staff of botanists of that establishment; and the comparatively recent German colonial policy has revived the interest in systematic and economic botany, to which it is devoted chiefly. Vols. xv. and xvi. are being published concurrently. This publication is partly devoted to original work and partly to a review of contemporary botanical literature. The fifteenth volume is largely taken up by contributions to the flora of tropical Africa, in the form of an elaboration by various botanists of the extensive collections made by numerous German travellers. Quite a host of new species are described, but, truth to say, nothing very remarkable in new generic types. *Hybophrynium* is a new genus of Scitamineæ, near *Trachyphrynium*, with which it was generically associated by Bentham and Hooker; and the Aroideæ, elaborated by Engler himself, include two or three new genera. *Pseudohydrosme* is characterised by a large, almost truncate spathe and a spadix without any terminal naked continuation.

Dr. J. Urban, who has been for some years engaged in collecting materials for a general flora of the West Indies, contributes "Additamenta ad Cognitionem Floræ Indiæ Occidentalis," a critical work, both from a botanical and a literary standpoint. No new genera are described.

One of the most interesting articles in the sixteenth volume is by Dr. O. Warburg, on the mountain plants of Kaiser Wilhelm's-Land, New Guinea. The collection of plants dealt with consisted of only fifty-three species, whereof thirty-two were supposed to be endemic, though the material of a few was insufficient for description. Two new genera are described, namely, *Hellwigia pulchra*, a pretty scitamineous plant, and *Zoelleria*, a singular borragineous plant, described as having ten nutlets in the place of the usual four! Among the new species are five rhododendrons, and the most noteworthy feature of the collection was the absence of essentially Australian types.

Another paper of general interest is Dr. Kränzlin's "Beiträge zu einer Monographie der Gattung Habenaria," excluding *Platanthera*, united with *Habenaria* by some botanists, 347 species are described; and they are spread over nearly the whole area inhabited by orchids.

Dr. Carl Bolle's "Botanische Rückblicke auf die Inseln Lanzarote und Fuertaventura" is a pleasantly written essay on the indigenous and cultivated plants of these islands. The "Jahrbücher" contain many other valuable articles. W. B. H.

Descriptive Geometry Models for the use of Students in Schools and Colleges. Designed by T. Jones, M.I.M.E. (Moss Side, Manchester.)

THE models are six in number. They are intended to show a line (1) by its projections, (2) by its traces; the inclination of an oblique plane (3) to the vertical plane, (4) to the horizontal plane; and to determine the angle (5) between two intersecting lines (6) between two planes. They are accompanied by hints for fixing and studying the models, and with a useful list of problems suggested as exercises for students. The clearness of the explanations, the simplicity of the constructive apparatus, and the compactness of the arrangements (all being contained in a handy cardboard box) commend Mr. Jones's work to students of solid geometry.

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 intended for this or any other part of* NATURE. *No notice is taken of anonymous communications.*]

Lion-Tiger Hybrids.

I HAVE read Dr. Ball's account of this subject in the issue of NATURE for February 23, 1893, and beg leave to call attention to the fact that the University of Cambridge possesses the skeleton and the stuffed skin of an *adult* hybrid between a lion and a tigress. I am able to supply the following information (which I have verified so far as it was possible) with regard to this specimen from a contemporary MS., entitled "Notice of the Lion-tiger which died in Cambridge, March 1833," by J. B. Melson, then an Undergraduate at Trinity College. This MS. no doubt contains the substance of a paper by Mr. Melson, which was communicated by Dr. Haviland to the Cambridge Philosophical Society, May 6, 1833. The paper was unfortunately not printed in the Transactions of the Society.

The Cambridge specimen, like those mentioned by Dr. Ball, was procured from the menagerie of Mr. Atkins. It was about six years old, and for some time previous to its death had been affected with paralysis of its hind quarters, arising probably from a distortion of the lower thoracic region of the vertebral column [which is still a marked feature of the actual skeleton]. Although inferior in size to either of its parents, the animal appeared to have attained its full dimensions. The shape of the head resembled that of the father (the lion), whilst the form of the body was more similar to that of the tigress. The body was faintly striped, while the prevailing shade was "of a dingy lion colour." The animal had neither a mane nor a tuft at the end of its tail.

The specimen was a female, and Mr. Melson states that "all the individuals of this hybrid race have as yet been females." The orifice of the vagina was smaller than in the tigress; and