

cubit of 17½ inches, divided into twenty-four digits, is also almost identical with the ancient Egyptian natural cubit of six palms and twenty-four digits. But it appears to be now impossible to determine whether these Indian units were derived from the Egyptian, or both from an earlier common source; although we may fairly assume that this natural cubit was of the same length as that used by Noah before the Deluge. Mr. Thomas's hypothesis of the lesser Indian unit of weight and of length, and of the scale of multiples and parts, is, however, probably correct, as being derived from natural and local sources.

OUR BOOK SHELF

Arboretum et Fleuriste de la Ville de Paris. Description culture et usage des Arbres, Arbrisseaux et des Plantes herbacées et frutescentes de plein air, et de serres, employées dans l'ornementation des Parcs et Jardins. Par A. Alphand. Folio, pp. 110. (Rothschild, Paris.)

ORNAMENTAL gardening, among other things that added to the attractions of the city of pleasure, was greatly fostered during the latter part of the reign of Napoleon III., and does not appear likely to languish under the Republic. The magnificent publication, "Les Promenades de Paris," by the author of the book now before us, is a costly work, known to comparatively few people in this country. We presume that the present volume is regarded as an appendix or supplement to the work named, otherwise we cannot account for the publication of what is little more than a catalogue of names in so unwieldy a form.

An enumeration of the plants grown for the embellishment of the parks and gardens of Paris, in a handy octavo form, would be welcome to almost every lover of horticulture; but the object of the compiler of the "Arboretum et Fleuriste" was doubtless such as we have indicated. It is printed on one side of the paper only, and the matter arranged in columns, giving the names, native countries, soil, use, height, form of leaves, colour of flowers, &c., of the various plants. As a horticultural catalogue the work is fairly well executed, but, like most gardening books, it contains errors that have been copied from book to book, though they were cleared up long ago. In the first part of the work the author has indulged in an attempt to introduce a reform in botanical nomenclature; why it was not carried through we are not told, probably for the reason that, however desirable reformation may be, this one would scarcely receive any support from botanists. It consists in giving all substantive specific names an adjectival form, and, a less justifiable act, of changing the terminations of good Latin names. Thus, for example, *Pinus Coulterii*, *Hartwegii*, and *Fenzlii*, become *P. Coulterea*, *Hartwegea*, &c. Objections might be urged against this course; but why should we change *Benthamiana* and kindred names into *Benthamea*? And *Pinus inops* for *P. inops* is quite inadmissible.

The information under the several headings is usually not inaccurate, but somewhat loose. Thus, under the genus *Magnolia*, Pennsylvania is given as the native country of *M. acuminata*, Carolina of *auriculata*, Virginia of *glauca*, and so on; whereas these trees have a much wider range of distribution. Again, under *Crataegus coccinea*, we are told that the specific name indicates scarlet flowers; but the flowers are white, and the fruit scarlet. But as it is not a botanical work, it is scarcely fair to criticise it by a botanical standard, though it is scarcely excusable to give North Africa as the native country of *Calla Ethiopica*, New Zealand of *Caladium esculentum*, &c. *Libocedrus decurrens* is referred to *Thuja gigantea*, and the true *T. gigantea* to *T. Menziesii*; but the synonymy of these plants has long been cleared up even in gardening books.

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.]

Prof. Willis's Mechanical Models

THERE is a slight error in your account of the disposition of Prof. Willis with regard to his mechanical models in your last impression (p. 14).

Prof. Willis did not put any price upon his models; but by his will, dated May 11, 1872, directed that his "mechanical models" should be "offered to the University of Cambridge at a price to be fixed by the valuation of some competent appraiser to be nominated and chosen" by his executors.

In consequence, we have caused the models to be so valued, and fixed upon the sum named (£1,200*l.*) after due consideration of the means of the University and the requirements of the estate.

A Syndicate was appointed on April 29 to consider whether the whole or a part of the collection shall be purchased. In the event of the University declining to purchase, the portion rejected will be offered for sale by public auction or private contract.

JOHN WILLIS CLARK

W. H. BESANT

Cambridge, May 9

Executors to the late Prof. Willis

Ants and Bees

IN NATURE, vol. xi. p. 306, Mr. Alfred George Renshaw refers to and criticises a paper on "Ants and Bees," lately read by Sir John Lubbock, and assumes, or seems to assume—and the language quoted justifies such assumption—that Sir John advanced the idea that bees have no means of communicating knowledge to each other.

It seems strange to me, who have been all my life familiarly acquainted with the working of bees, that anyone should doubt their power of communicating knowledge. The very idea there advanced, that "if the bees had the means of communicating knowledge, those bees would have told the others in the hive where they could obtain a good store of honey with a very little trouble, and would have brought a lot back with them," I have seen proved and illustrated hundreds of times.

Bee-hunters understand this faculty in the bee perfectly well, and turn it to a good account. Going to a field or wood at a distance from tame bees, with their box of honey, they gather up from the flowers and imprison one or more bees, and after they have become sufficiently gorged, let them out to return to their home with their easily-gotten load. Waiting patiently a longer or shorter time, according to the distance of the bee-tree, the hunter scarcely ever fails to see the bee or bees return, accompanied with other bees, which are in like manner imprisoned, till they in their turn are filled, when one or more are let out at places distant from each other, and the direction in each case in which the bee flies noted, and thus, by a kind of triangulation, the position of the bee-tree proximately ascertained.

Those who have stored honey in their houses understand very well how important it is to prevent a single bee from discovering its location. Such discovery is sure to be followed by a general onslaught from the hive unless all means of access is prevented. It is possible that our American are more intelligent than European bees, but hardly probable; and I certainly shall not ask an Englishman to admit it. Those in America who are in the habit of playing first, second, and third fiddle to Instinct will probably attribute this seeming intelligence to that principle.

It seems to me, and I think it may be so concluded on scientific principle, that there is no difference, except in degree, between the intelligence, or whatever it may be called, of man and of lower animal life. If the honey-bee, the ballooning spider, the agricultural ant, or the dog, is governed wholly by instinct, then it seems reasonable to infer that man is also governed by instinct. If all the actions of lower animal life are automatic, on what principle shall we say that man's are not automatic? If man builds his house, and, intending to furnish it and lay in a stock of provisions, ascertains from his neighbour where he can get the most at the cheapest rate, does he act on any principle different from the bees, who build their house and jointly or separately ascertain where the best stock of honey can be obtained?

In regard to selfishness, I think the bee has the advantage of