the whole book. There are two tree ferns, of the genus *Cibotium*, one (*C. menziesii*) reaches a total height of 26 feet and its stem often has a diameter of three feet. Monocotyledons are represented by a *Pandanus*, eleven palms (*Pritchardi* and *Cocos*) and a *Dracaena*. In the Dicotyledons one finds many unfamiliar genera in familiar families: as *Trema* (Ulmaceae), *Urera* and *Pipturus* (Urticaceae), *Nototrichium* and *Charpentiera* (Amaranthaceae), *Broussaisia* (Saxifragaceae), *Colubrina* (Rhamnaceae), *Jambosa*, *Syzygium*, and *Metrosideros* (Myrtaceae), *Pteralyxia*, *Ochrosia* and *Rauwolfia* (Apocynaceae), *Clermontia* and *Cyanea* (Campanulaceae), *Dubautia*, *Raillardia*, and *Hesperomannia* (Compositæ). On the other hand one finds, also, *Artocarpus* (Moraceae) the well-known "Breadfruit tree"; *Pittosporum* (Pittosporaceae), of which there are twelve species, several of which are more than twenty feet high; *Acacia* and *Sophora* (Leguminosae); *Xanthoxylum* (Rutaceae); *Euphorbia* (Euphorbiaceae), two species of trees from 15 to 25 feet in height; *Rhus* (Anacardiaceae); *Ilex* (Aquifoliaceae), one tree of 20 to 40 feet in height; *Hibiscus* (Malvaceae), including trees 20 to 30 feet in height; *Sideroxylon* (Sapotaceae), some 50 to 60 feet high; *Osmanthus* (Oleaceae), sixty feet high; *Solanum* (Solanaceae) a small tree, 15 to 20 feet high. Many of the trees bear foliage of such a structure as to hide completely their botanical relationship.

Among the notable trees is the koa (*Acacia koa*), "one of our most stately trees." "It is perhaps the most valuable tree which the islands possess, as it is adapted for construction as well as for cabinet work. The koa reaches a height of more than 80 feet in certain localities, with a large trunk vested in a rough, scaly bark of nearly an inch in thickness." Another tree (*Pisonia umbellifera*) possesses so soft a stem that "trunks of a foot in diameter can be felled with one stroke of the axe."

The largest family, so far as the tree species are concerned, is Rutaceae (32 sp.), followed closely by Rubiaceae (31 sp.), and then Campanulaceae (15), Araliaceae (14), Pittosporaceae (12), Palmaceae (11), Myrsinaceae (11), and Malvaceae (10).

At the end of the volume there is a good index to the scientific names, followed by one of the Hawaiian and few English names.

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*Science from an Easy Chair.* Second series. By Sir Ray Lankester. New York, Henry Holt and Company. 1913. Pp. 412.

In his chapter on Museums, Sir Ray Lankester deplores the fact that so many are "mere enlargements of the ancient collector's 'cabinet of rare and curious things,' brought together and arranged without rhyme or reason." His book, dealing in one small volume with such diverse matters as Kisses, Ferns, Glaciers, Elephants and Tadpoles, might possibly be described in similar terms; yet it is by no means without merit. It is a significant and interesting fact that a zoologist of the first rank, retiring from the directorship of the British Natural History Museum, should think it worth his while to contribute weekly articles on scientific subjects to a daily paper, regularly for a period of five years. It is no less significant that this paper (the *Daily Telegraph*) should be willing to print them as they stand, popular in form, but dealing in many cases with technical matters which require close attention in order to be understood. The book before us consists of a selection from this newspaper series, with some revision and expansion, and a number of illustrations. It possesses the original journalistic tone, and consists essentially of well-written dissertations on matters familiar to specialists, but, for the most part, new to the general public. I have read the greater part of it with pleasure and interest, and, while different chapters will appeal to different people, few can fail to find something of value. Some of the essays, as those on Food and Cookery and Misconceptions about Science, reflect so strongly the author's prepossessions that they naturally arouse a combative spirit in those of a different temper. Here and there, expressions have crept in which the author would scarcely de-

fend in cold blood; thus (p. 19) "even the destructive bacteria which are killed by the sun probably enjoy an exquisite shudder in the process which more than compensates them for their extinction"; and (p. 344) "every step which he [the house-fly] takes he plants a few dozen microbes, which include those of infantile diarrhœa, typhoid and other prevalent diseases,"—a gross exaggeration in a chapter which very properly calls attention to the great harm done by flies as carriers of bacteria.

The time has certainly come for scientific men in America to attack the problem of scientific journalism in an organized and deliberate manner. The individual naturalist is more or less helpless. When I was curator of the museum in Jamaica I contributed weekly articles to the newspapers of Kingston, which printed them as written, and even illustrated them when requested. These articles interested a good many people and were the cause of many visits and contributions to the museum. In Colorado I have tried the same thing, and given it up in despair. The papers will not print things accurately or in full, and will often supply headlines of the most ridiculous kind. Here is a typical incident. A friend of mine shot a large eagle and measured it from tip to tip of the wings. Thinking the matter of interest, he handed in the item to a daily paper. The editor, with the best of intentions in the world, added a foot to the measurement, with the result that my friend appeared to those who knew anything of eagles a remarkable liar! These troubles are not confined to the wild and woolly west. Even the *Outlook*, certainly one of our best-edited journals, recently published an article on A. R. Wallace which contained in the first column a number of errors concerning the best-known facts of his life.

It is not true, of course, that the newspapers *always* select incompetent writers on scientific subjects, or *always* distort accurate information communicated to them; but if they are to be the means of enlightening the public concerning the discoveries of science, they must *never* do these things, except through such unfortunate accidents as can not perhaps wholly be avoided. One can not write to the papers if the chances are one in five or ten that one will be exhibited as a fool or liar, and the public misled as to the facts.

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## SPECIAL ARTICLES

### A NOTE ON SEX DETERMINATION[1]

OF the many hypotheses that have been advanced to explain the determination of sex, one group seeks to show that in bilateral animals the sex of the offspring is dependent upon the right or left source of the effective genital element in that right glands produce offspring of one sex, left glands those of the other. Such a general theory may be applied, of course, to either the ovary or the testis. Thus Seligson (1895)[2] formulated the hypothesis that in mammals the right ovary gives rise to eggs that produce male offspring, the left to eggs that produce female offspring.

In collecting a body of data to show the relation of the size of litters to the number of nipples in swine (Parker and Bullard, 1913),[3] certain facts appeared which have a bearing on such hypotheses. The records brought together in this connection included the position that the young pigs occupied in the uterus and their sex. In reasonably large litters it was therefore possible to make a rough comparison of the products of one ovary with those of the other by contrasting the young pigs in one horn of the uterus with those in the other. The possibility of the migration of an egg from one side of the body to the other could not be excluded, but to reduce to a minimum the effect of this on the statistics and to make the comparison as striking as possible, the

[1] Contributions from the Zoological Laboratory of the Museum of Comparative Zoology at Harvard College, No. 245.

[2] Seligson, E., "Zur Bestimmung und Entstehung des Geschlechts," *Centralbl. für Gynäkol.*, Bd. 19, pp. 590–595, 1895.

[3] Parker, G. H., and C. Bullard, "On the Size of Litters and the Number of Nipples in Swine," *Proceed. Amer. Acad. Arts and Sci.*, Vol. 49, pp. 397–426, 1913.