

SPANG'S LIGHTNING PROTECTION.

A practical treatise on lightning-protection. By HENRY W. SPANG. New York, Van Nostrand, 1883. 63 p. 8°.

THIS is a new and enlarged edition of the author's treatise on lightning-protection, published in 1877. The book contains altogether too many good things to be bad, and too many bad things to be entirely good. There is a wholesale condemnation of all systems and methods other than those described, which is a little perplexing, until one discovers, and in fact the author confesses, that it is issued with a view of effecting a general introduction of a *patented* system of lightning-conductors. The business air which pervades the whole is thus clearly explained.

The author frequently pronounces against the 'lightning-rod men and scientists,' attributing the blunders of the former to the mistakes of the latter. A brief examination of his book will suffice to fully acquit him of the charge of belonging to the latter class; and it must be confessed, that the many excellent rules which he has emphasized oblige us to rank him considerably above the general average of the former. The general principles of lightning-protection, as presented, are in the main correct; and, as general principles, they deserve a wide dissemination. The particular system urged as the only efficient one is more complicated, and, even if it were not patented, more expensive than is necessary. Some novel statements are made, concerning what lightning 'will do' under certain circumstances, in the same paragraph in which the author bemoans the ignorance shown by scientific men on the subject of lightning-protection.

The author does not seem to be aware of the existence of what is doubtless the most complete and authoritative treatise on the subject yet published, — the elaborate 'Report of the lightning-rod conference,' edited by G. J. Symons, F.R.S. This conference was made up of delegates from the London meteorological society, the Royal institute of British architects, the London society of telegraph engineers and electricians, the London physical society, and two co-opted members, Profs. W. E. Ayrton and D. E. Hughes.

The examination of the various problems presented was exhaustive, and the code of rules for the erection of lightning-conductors published in the report is simple and easily understood. The proper construction of an efficient lightning-conductor is, after all, a matter of no great difficulty, and of comparatively little expense. The inauguration of a proper system

of testing conductors would certainly reveal some astonishing facts in regard to the efficiency of rods as generally erected, elaborate and expensive as they often are. The wide circulation of the rules adopted by this conference would undoubtedly be the means of bringing about a much-needed reform in this direction.

COHN'S 'DIE PFLANZE.'

Die pflanze: Vorträge aus dem gebiete der botanik. Von Dr. FERDINAND COHN, professor an der Universität zu Breslau. Breslau, Kern, 1882. 8 + 512 p. 4°.

THIS elaborately gotten up book of over five hundred pages comes to us as a contribution to general literature, and does not address itself to the scientific botanist, except as he is interested in a popular presentation of botanical facts and problems with which he is supposed to be more or less familiar. Dr. Cohn believes it to be the duty of those versed in any branch of science to produce a literature which shall invite a large circle of readers to an interested acquaintance with their chosen science. "Nor are they to recoil from this task," says he, "because of the difficulties which present themselves for satisfactory solution, or because popular writings on natural science have been undervalued by many." Actuated by his conviction, Dr. Cohn has collected the addresses which he delivered at various places in Germany between the years 1852 and 1881, and, while retaining their original form, has remodelled them sufficiently to bring them up to date and compact them into a shapely whole.

In the preface the author sets forth a difficulty which besets the popular lecturer on scientific topics, — one which doubtless every one who has tried this style of address has fully realized, — namely, the meagre knowledge and hazy comprehension with which the majority of hearers listen to his words, necessitating so long a dwelling on the elementary facts of the topic that little time is left for the consideration of the more recondite and interesting points.

If we may be allowed to judge, Dr. Cohn has overcome this difficulty to a large degree in a very happy manner. He devotes the first lecture, entitled 'Botanical problems,' to a brief history of the development of botany, and an explanation of some of the elementary principles of the science, thus paving the way for subsequent discussion of more special matters. Some idea of the variety of the topics treated may be gained from the titles of the sixteen lectures, which are as follows: 'Botanical problems,' 'Goethe as a botanist,' 'The cell state,'