

piece of paper on them, then if any twist or shake occurs, the beauty of the wing—the scales—will be better protected. This is a plan adopted by that enthusiastic lepidopterist, Capt. Geddes.

This concludes the details of the principal requirements for beginners in this delightful study, and hereafter the papers will be descriptive of the various orders.

BRIEF REVIEW OF BOOKS RECOMMENDED FOR THE ENTOMOLOGICAL DEPARTMENT.

Packard's Guide to the Study of Insects, Estes & Lauriat, New York, is a standard and thorough description of the various forms of insect life, and is indispensable to the entomological student.

Packard's Half Hours with Insects, Estes & Lauriat, New York, is exceedingly interesting reading and correct and reliable; it is more suited to those wishing to obtain a light and interesting fund of information concerning insects.

Orton's Comparative Zoology, Harper Bros., New York, will give a most excellent idea of the status of insects in the animal kingdom; it is most thorough and suitable for all naturalists.

Lubbock's Origin and Metamorphosis of Insects, Macmillan, New York, is a well-written work upon the various changes through which insects pass; it is very necessary that students should be quite conversant with this subject, and much profit and pleasure is to be derived from its perusal.

Wonders of Insect Life, Amer. Bapt. Pub. Co., Philadelphia, is a most complete and interesting work for lovers of nature to peruse. It is written in that free, conversational style which so well suits that large class of readers who delight in brief sketches on scientific subjects, but who do not care or have not the opportunity to thoroughly master a subject.

Woods' Illustrated Natural History, Harper Bros., New York, is most prolific in illustrations, and has brief descriptions of representatives of almost every family and species through the whole range of Natural History, is very well got up and will help the student to gain a general idea of the classification of the various subdivisions of nature's kingdom.

Meanton's How to Catch and Prepare Insects, P. Boyle, Yonge St., Toronto, is a brief and accurate little book on this subject, and will be found useful to the beginner and save him the expense of experience.

Naturalists Manual, by Oliver Davis, Boyle, Yonge St., Toronto, is a very complete and cheap little work, treating of Birds, Nests and Eggs, as well as Insects. It is accurately

written and serves its intention very well—that is, teaching beginners.

Check and Label Lists of the Insects of Canada, Boyle, Yonge St., Toronto. These are complete lists of all insects known or identified in Canada, to the date of publication, and will both be required—the Check List to make exchanges with others, and the Label List for pasting in the cases after identification.

Mineralogy.

By Prof. S. K. HITCHINGS.

HORNBLENDE.

Composition, silicate of magnesia, lime and iron; long and bladed but sometimes thick and blunt; often marked by longitudinal striae. Occurs in granular masses, coarse or fine; cleavage, lengthwise of crystals; breaks easily, transversely. Lustre, glassy or pearly, fibrous forms silky. Color, usually black or green. Translucent to opaque. Hardness 5 to 6. Varieties: *Tremolite*. Color, white or grey; usually in slender crystal.

Actinolite. Color, bright green, sometimes glassy; also occurs massive forming *actinolite rock*.

Asbestos. In fine flexible fibres, easily separable by the fingers, resembling flax.

Hornblende occurs in *Hornblende rock*, a hard granular rock, found abundantly at St. Francis, Canada. In *Syenite*, a granite-like rock, it is found with quartz and feldspar.

Dolerite, a fine tough trap rock.

Aphanite is like dolerite, but without distinct grains.

Hornblende schist, of schistose or slaty structure.

FELDSPAR.

This name is applied to a class of minerals that are alike in several respects. They have a distinct and easy cleavage in two directions, forming