color vision, it is exactly an even blue-green, which looks to the yellow-blue visioned individual achromatic. In this case, of course, there was no occasion for trying blue-green, since the rats could not be shown to have any color sense at all—a result which there are several reasons for having anticipated. Nevertheless, it remains true—what v. Frisch's discovery confirms—that you can not, as a matter of fact (nor in my theory), draw simple inferences from the unitary colors to the color-blends.

Professor v. Frisch has sent me specimens of the blue-greens to the chroma-quality of which his bees are insensitive; I should be glad to share them with any one who can proceed to test the blue-green sense of any animals which are already known to be blind to red.

Christine Ladd-Franklin
Columbia University,
November 7, 1913

Notes on a Chestnut-tree Insect

While in the employ of the Pennsylvania Chestnut Tree Blight Commission, last winter, my attention was called to numerous burrows almost always present in the bark of the chestnut tree, particularly in the smooth-barked trees. These are the burrows that Metcalf and Collins referred to in the U. S. Farmers' Bulletin, No. 467, as the work of *Agrilus bilineatus*. As we were sure the burrows were not made by this species, the commission force referred to the insect maker as the *Bast Miner*. Not much was accomplished on the study of this insect until the spring season advanced. Then much effort was directed to the solving of the life-history of this insect and what relation it bore to *Endothia parasitica*. When the work stopped in July, the life-history was nearing completion, and a number of experiments were in progress which would have given some interesting results. A detailed account of the description of the larva and its work, etc., was prepared for publication, but the only adult obtained was injured irreparably and probably can not be named. Because the adult insect emerged after July 1 (the time of my leaving Pennsylvania), it has been impossible to work out the egg-laying habits. The larvæ hibernate in the burrows in either the second or third instar. During the winter months they are inactive, but, as soon as spring opens, activity commences. When finished, the burrow is not very extensive, the longest not being more than six inches and extending longitudinally. In width, it extends only over a very short distance.

While the insect is living within the trees, the burrow can not be detected externally. After the emergence of the larvæ, however, the bark swells over the burrow, often cracking and making a conspicuous wound. The larvæ leave the trees during the first part of June through minute exit holes, dropping to the soil, in which they spin a seed-pod-like cocoon, characteristic of some of the Microlepidoptera.

Under insectary conditions, the adult insect emerges during August. The injured specimen was sent to Mr. W. D. Kearfott, but of course could not be named.

The number of exit holes made by these insect larvæ is enormous in any given area of chestnut forest and as these holes are made just at the time of year that the blight spores are very abundant, and conditions generally are favorable for their development, it is believed that this species of insect has an important bearing upon the spread of *Endothia parasitica*.

A. G. Ruggles
University of Minnesota,
November 10, 1913

A Connecting Type?

An illustration of how completely a student may become confused in a written examination is shown in the accompanying figure, which is an exact tracing, somewhat reduced, of the figure drawn by a freshman in an examination in elementary zoology.

The question was to make a sketch, from memory, of course, of the anatomy of *Amphioxus*, as seen in lateral view.

At first glance the sketch appears to be a fairly good representation of a lateral view of