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## Science in Seventh and Eighth Grades

Mabel Gauger

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Laboratory Manual to accompany not yet published.

D. C. Heath and Co., Chicago.

6. Hoadley—Essentials of Physics. 544 pages, illustrated. Accompanied by Physical Laboratory Handbook, 107 pages, 62 experiments; and by Teacher's Manual. American Book Co., Chicago.
7. Tower, Smith, Turton, and Cope—Physics. 492 pages, 77 sections, illustrated. P. Blakiston's Son and Co., Philadelphia.
8. Duff and Weed — Elements of Physics. 55 chapters, 574 pages, 466 figures. Longmans, Green and Co., Chicago.
9. Of Use in the Physics Course. Hodgman and Lange—Handbook of Chemistry and Physics, Fifteenth Edition. 1426 pages. Mathematical Tables, General Chemical Tables, Properties of Matter, Heat, Hygrometric and Barometric Tables, Sound, Electricity and Magnetism, Light, Miscellaneous Tables, Definitions, Formulae, Measures and Units, Wire Tables, and Problems. Chemical Rubber Publishing Co., Cleveland.

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### QUESTION BOX

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#### Question:

What products are made from corn stalks and cobs?

#### Answer:

This question can not be answered completely, since investigators are continually adding to the list. However, the following are the most important products up to August, 1928.

#### From stalks:

1. Paper
2. Insulating boards
3. Rayon
4. Lumber substitutes
5. Vulcanized fiber or cellulith

#### From cobs:

1. Charcoal

2. Acetic Acid
3. Formic Acid
4. Methanol
5. Tar
6. Illuminating gas
7. Acetone

A study of the uses of the above products would be very interesting, for they are almost without number.

If one desires a more complete answer it may be found in Bulletin 99 of the Engineering Extension Department, Iowa State College, Ames, Iowa. This bulletin is free.

Winfield Scott.

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### FROM TEACHERS IN THE FIELD

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#### Science in Seventh and Eighth Grades

Much value is obtained from clippings and pictures brought by the pupils and explained by them to the other members of the class. The article is discussed and then put on the bulletin board for two weeks where all may read it. Five or ten minutes of each class period are given over to "News", whether it be of the type above mentioned, or some personal experience, discovery or question along the line of the unit being studied. One objection can be given: Sometimes the discussion is apt to wax warm or to continue too long.

Booklets made of scientific clippings, and posted, are also of interest and value.

Two methods of review have been used. The first is by means of study guides. Mimeographed sheets of questions, with from one to five questions on each topic have been made. Topic numbers accompany the questions so that pupils can more easily find what they are seeking. Work is done by two or three persons in a group, although each has before him a set of the questions. Texts, notebooks, each other's and, if necessary, the teacher's information are used to clear up any point or to fix

forgotten things. The second method is by means of a review contract. Outlines of topics are made, references cited, and books from public and school libraries brought to the classroom for use during the study. In the classroom the pupils work in groups of five or six, as classes are large and material not too abundant. Smaller groups would be better.

As we have classes but two hours a week, only one, two, or three of these outlines can be covered in a six weeks' period. Last semester booklets containing completed outlines, graphs, maps, diagrams, poems, and illustrations were made about birds, trees and plants, power, minerals, fuels and transportation. The list of topics was presented to the pupils, and each made a first and second choice of subjects. "Birds" was most popular, although "Trees and Plants" was a close second.

Mabel Gauger, Newton, Iowa.

#### Life in the Biology Laboratory

Shortly before our class in 10th grade biology was formed, I started preparing a balanced aquarium for the laboratory. In it we have about a dozen small gold fish, several snails, two tad-poles, and a good growth of moss. This aquarium has provided us a great deal of pleasure, as well as many illustrations of life itself.

The most interesting line of events came when the snails began to deposit their eggs on the side walls of the aquarium. Here was an interesting study in embryology and development.

I rigged up an old microscope so that we might view these eggs directly through the glass of the aquarium without disturbing them. Viewing something through a microscope always has a fascination, especially when the object moves. By placing the barrel of the microscope on the frame so that it lay in a horizontal position, with the aquarium on a table between the microscope and a

window, the eggs could be distinctly seen.

The embryo snail when first deposited is merely a speck of protoplasm, but by the aid of a microscope it can be seen to move about, rolling over and over in its narrow confines.

We watched these eggs almost daily. Much to the surprise of the youngsters, they could actually be seen to grow, and even though they were still little more than mere specks they began to resemble the adult snail.

Among other things, we had the pleasure of seeing a gold fish rob one of the nests of eggs. This gave us the idea of protecting the eggs by placing another glass just inside of the aquarium wall to keep away the fishes and adult snails.

We watched these eggs until snails emerged from them, crawled along the glass, and disappeared into the sand, where, no doubt, they provided a fine tender meal for the fishes.

E. G. Brockman, Biology.  
Mount Ayr High School  
Mount Ayr, Iowa.

#### Torrid, Temperate, and Frigid

(Continued from page 3.)

one-sixth, recognize the zone in terms of sun behavior. Practically the same proportion as in the case of the 450 beginning college students.

The investigation up to date certainly does indicate that the terms torrid, temperate and frigid breed erroneous ideas. From a geographical standpoint they are of little value to children. They do not in any way contribute to the real aim of geography, an understanding of man's relationship to his natural environment, because they give very inaccurate ideas of the climatic conditions within the zones. Would it not be better to omit the use of these words altogether, and with beginning grades in geography use the terms, lands near the equator, near the poles, mid-way between equator and poles. A little later the terms low latitudes, high lati-