which contains about 17,236 cubic feet of sediments has been deposited since 1924. In 1934 a small island, composed of about 1,200 cubic feet of earth, was constructed as a nesting place for swans about 40 feet from the delta and directly in the path of the incoming stream. Since that date it has been connected to the delta by deposits of sediment, mostly shale and sandstone, the particles of which range from one half inch to two inches in diameter.

Beyond this coarse material a silt rod survey showed that the average thickness of the fine sediments which covered the bottom of the lake was 2.8 feet, while still farther from the incoming streams, near the dam, the average thickness was 2.4 feet. Computations of the total amount of sediment on the bed of the lake indicate that 102,800 cubic feet had been deposited between 1915 and 1935. In 20 years the water-holding capacity of the lake had been diminished 29 per cent. by silting. If we assume that the average weight of a cubic foot of silt is 100 pounds, this would mean that over 5,000 tons of silt have accumulated in this lake during the past 20 years.

There are several factors which have effected this deposition; the most influential one is probably the treatment of the farms and fields which drain into the lake. The water-shed is a small typical southeastern Ohio area of about 207 acres. This area was mapped in 1935 by the Soil Conservation Service as to soil erosion, slope and cover (cover meaning land use). Slightly less than half of the area is the property of Muskingum College and is used as college campus. This campus, from the standpoint of soil cover, may be considered as pasture, with the exception of a small area which is used as a baseball field and a small area of unpastured woodland. Approximately 12 acres of the water-shed are cultivated.

Most of the area is class 3 erosion.[1] In most of this particular area this would mean that from 4 to 7 inches of soil had gone down the streams and into the lake. There is one area of class 2 erosion, a small area in which we found from 6 to 8 inches of top-soil remaining. There are no serious gulleys in the area and only a few small places where the top-soil is entirely gone and the shaly sub-soil exposed. The soils of the area are all Muskingum soils, that is, residual soils of sandstone and shale origin, with the exception of a poorly drained flood plain of about one acre in area, which is Atkins silty clay loam.

In our analysis of the causes of deposition in the lake we found that construction work had probably been influential in affecting the sedimentation. Since the lake was constructed in 1915 a series of tennis courts, a baseball field and a football stadium have been constructed above the lake. All these have entailed extensive excavations and it is reasonable to believe that the process of sedimentation was greatly accelerated during these periods. However, we do not feel that the wash from these areas was the dominating influence in producing the sedimentation noted. The condition of the pasture fields, the campus and the cropped areas leads us to believe very strongly that sheet erosion and the small amount of gullying noted in the drainage area have had the greatest influence in producing the sediments which washed down the two small streams and settled in the lake.

[1] Class 3 erosion is used to indicate land from which 25 to 75 per cent. of the top-soil is removed.

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MUSKINGUM COLLEGE

A NEW COLOR TYPE IN CABBAGE

"COLORED bud" is a brief descriptive name of a character found in an inbred line of cabbage in 1935 which to the writer's knowledge has not been previously described. Except for the light reddish purple color on the edge of the leaves of some plants, which may be the same as "sun color" previously described,[1] there is no external evidence that the terminal bud within the head is other than the usual white or pale cream in color. As the leaves are successively stripped away from the outside to the center, the leaf color is first green, then white (or cream) and finally pale pink or magenta.

The pinkish color is most intense on the edges of the small leaves surrounding the terminal bud and varies from 41B2 to 41C3 in terms of the "Dictionary of Color."[2] The color may be restricted to an area within one-half inch of the apex of the stem, or may extend over an area three inches in diameter surrounding the terminal bud. Upon exposure to light these colored leaves as well as the white ones soon develop a deep green color which obscures the other color.

The family in which this type first appeared comprised 84 colored and 32 white bud plants. Since the writer is unable to continue work with cabbage the remaining stock of seeds of this and related families is being sent to C. H. Myers, of Cornell University, for work on inheritance of colored bud and its relation to other color types. In correspondence dated November 2, 1936, Dr. Myers mentions the existence in his cultures of a type similar to the one described above.

This color type appeared in the third inbred generation from seed of a local variety of cabbage, purchased in the market place of Tashkent, Turkestan, U. S. S. R., by W. E. Whitehouse and introduced in the United States under number P.I. 82649 of the Division of Plant Exploration and Introduction of the

[1] Roy Magruder and C. H. Myers, *Jour. Agr. Res.*, 47: 233, 1933.

[2] A. Maerz and M. R. Paul, A Dictionary of Color, McGraw-Hill, New York, 1930.

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MAGNESIUM SULFATE—A NEW INSECTICIDE

DR. V. R. HABER discovered the insecticidal properties of magnesium sulfate (Epsom salts) several years ago. His tests showed that $MgSO_4$ used as a spray, in the proper concentration, constitutes an effective control for the Mexican bean beetle (*Epilachna corrupta* Muls.). This spray has many advantages over arsenical sprays, in that it is easily applied, easily removed in preparing beans for cooking, and is harmless to humans if ingested.[1]

Hawkins, in a paper on the wheat wireworm (*Agriotes mancus* Say), finds magnesium sulfate and magnesium chloride toxic to this form.[2]

The following work on grasshopper control by $MgSO_4$ is the outgrowth of Dr. Haber's suggestion. Since there were neither time nor facilities to make complete tests, the results are only preliminary.

Grasshoppers, confined in small insect cages, four per cage, were fed with bran baits made of bran, molasses and water, with $MgSO_4$ added for test groups. The control groups received the bait with no poison, while others received a 5 per cent. arsenic bran bait. The test groups received the standard bait with 5 per cent., 10 per cent., 15 per cent., 20 per cent., 25 per cent. and 30 per cent. $MgSO_4$ added.

From comparisons of the mortality rates among the different groups, the following formula for a grasshopper bait is proposed:

Bran	60 per cent. to 65 per cent.
Molasses	15 " "
$MgSO_4$	20 " " to 25 " "
Water	Enough to moisten.

This formula seems to be just as effective as the 5 per cent. arsenic bait, it is cheaper, and it is absolutely harmless to humans, cattle, swine and poultry or other birds.

These results indicate that $MgSO_4$ may be an insecticide of value for the control of mandibulate insects. As a spray, it could be used safely on many vegetables and fruits, with little danger to humans and domesticated animals eating such foods. It is cheap, easily dissolved and should be compatible with other insecticides. Entomologists with facilities for testing $MgSO_4$ as an insecticide against mandibulate insects should attempt to determine its value in the control of such forms.

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ANATOMICAL NOMENCLATURE

AT the annual meeting of the American Association of Anatomists, held at the University of Toronto on March 26, 1937, Professor C. M. Jackson, chairman of the Committee on Anatomical Nomenclature, made the following statement.

An account of the establishment of a permanent International Commission on Anatomical Nomenclature was published in the Anatomical Record, 1936, vol. 67, No. 1, pp. 1–6. This Commission adopted the NA system of nomenclature as the basis for revision, and requested that any desired changes be submitted before September, 1937. (The NA list was printed in the Anatomischer Anzeiger, Ergänzungsheft zum Band 81, 1936.)

Accordingly during the present year our American Committee has studied the question as to what changes should be proposed. Many difficult problems are involved. While the committee has not yet reached a final decision, it has agreed upon some questions of general policy. One is that in order to reconcile conflicting views it will be desirable for the present to use synonyms for some of the terms, as (for example) many of those of position and direction.

Any member of the Association may propose desired changes in the terms listed by the NA, and our committee would be glad to have these proposals for consideration. As the time is short, any such proposals should be submitted promptly, with reasons therefor. It is hoped that the final report of nomenclature with the recommended changes can be formulated in time to submit it to the Executive Committee of the Association for review and criticism before it goes to the International Commission.

GEORGE W. CORNER,
Secretary

SPECIAL ARTICLES

PHOSPHORESCENCE OF CELLS AND CELL PRODUCTS

A BODY which continues to give off light for a visually observable period of time after exposure to radiation is generally said to be *phosphorescent*.[1,2] Phosphorescence of inanimate systems has been studied rather extensively;[3] little attention, however, seems to have been paid to the phenomenon in cells and cell products. Thus while phosphorescence of tissues was

[1] Personal letter from Dr. V. R. Haber.
[2] J. H. Hawkins, Maine Agr. Exp. Sta., Bull. 381, 1936, p. 120.

[1] R. A. Morton, "Radiation in Chemistry," 1928.
[2] S. E. Sheppard, "Photo-chemistry," 1914.
[3] P. Pringsheim, "Fluorescenz und Phosphorescenz," 1928.