medal and a special cash award, also an award of merit from the Garden Club of America. The Botanic Garden also exhibited four specimens, in flower, of the Devil's Tongue, *Amorphophallus* (*Hydrosme*) *Rivieri*. This exhibit, also, received a special award.

THE International Cancer Research Foundation has awarded to the School of Medicine of Temple University $6,000 to further the study started more than three years ago by Dr. Temple Fay, investigating the relationships between body segmental temperatures and the incidence of malignancy. Clinical observation has indicated that sub-normal temperatures and tissue refrigeration tend to inhibit abnormal cellular growth. The committee to administer this fund is composed of Dr. Temple Fay, professor and head of the departments of neurology and neurosurgery; Dr. Lawrence Weld Smith, professor of pathology, and Dr. William N. Parkinson, dean.

ANNOUNCEMENT of the gift of two telescopes which have been added to the equipment of the department of astronomy at Radcliffe College has been made by the trustees of the college. One is a photographic telescope made by Felker. The second is a Bausch and Lomb four-inch visual refractor. Both telescopes are mounted equatorially and have been erected in a small observatory on the roof of Byerly Hall, the science building where courses in elementary astronomy are conducted. Advanced students are privileged to use the facilities of the Harvard University Observatory.

THE Printing Industry Research Association has been founded in Great Britain for the purpose of supplying the trade with technical knowledge not only of type, paper and ink, but of the illustration processes most widely used—photo-engraving, lithography, photogravure. Bookbinding and box-making are also included. Printers vexed with problems arising from their work in any of these categories will be given specialist guidance on application to Patra House, the headquarters of the new association, which is maintained by the printing and allied trades in conjunction with the Government Department of Scientific and Industrial Research. The laboratories were opened by the Duke of Gloucester on March 9.

DISCUSSION

SEDIMENTATION IN A SMALL ARTIFICIAL LAKE

LAKES and reservoirs are often seriously affected by sediments which collect in them and which diminish their storage capacity. If erosion loss from the farms —sheet and gully wash—is not controlled, will sedimentation injure or destroy the work of the government in the great dams of the Muskingum Conservancy District and similar projects? If the water storage capacity of lakes and reservoirs is being seriously decreased by sedimentation, can this sedimentation be prevented or decreased? What factors are involved in the silting of reservoirs? These are some of the questions which may be raised in connection with observations of lake and reservoir silting. Obviously, the answer to these and other questions must be made from data collected from a number of different lakes and reservoirs. We, therefore, submit some observations taken in a small artificial lake in the hope that our observations, together with many other such observations, may prove of value.

On the campus of Muskingum College there is a small artificial lake, which has an area of about 40,750 square feet and a volume of about 410,000 cubic feet. In the fall of 1935 we made a study of the amount of silting which had taken place in the lake since its construction in 1915.

Before 1915 the site of the lake was occupied by two small streams which joined where the lake is now located. About 300 feet below the junction of these two streams an earth dam, 150 feet long and 75 feet wide at its base, was constructed across the valley. For a distance of 200 feet above the dam an area 150 feet wide was excavated for the purpose of forming a basin and in order to obtain earth for the dam. A vertical cement outlet which stands near the lateral center of the lake, 30 feet from the dam, has been provided to take care of the overflow.

As the lake was constructed it is an almost perfect settling basin; the only materials which escape are particles so fine that they do not settle out before the water goes over the outlet and material in solution.

A plane-table survey was made in order to obtain a map upon which the data were placed and from which the area of the lake was calculated. A silt rod was then used and the depth of the silt on the bed of the lake was determined as well as the depth of the water in the lake.

A mechanical analysis of the sediment was not undertaken, but note was made that where the two streams enter the lake the material was of visible shape, while farther from the streams the sediment was composed of fine material such as silt.

The coarser sediment was naturally deposited where the incoming streams dropped the heaviest portions of their load as their velocities were decreased upon entering the lake. While the total volume of this type of material is not as great as the volume of the finer materials the effect is more noticeable because of the concentration of the material near the mouths of the streams. At the mouth of one of the streams a delta

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.