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Care of Laboratory Equipment

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time, Ross had been working with mosquitoes of the genus Culex, and this new spotted-winged variety proved the key to his difficulties.

A native had brought him a vial of mosquito larvae and from these larvae had developed a number of spotted-winged adults. Ross decided to dissect them. The first six showed nothing, but in the seventh, to his great joy and astonishment, he found a number of large swellings on the outer wall of the stomach. When examined, these swellings proved to be fertilized eggs of the malarial parasites, and each contained some of the black pigment mentioned above.

About this time the plague scare in India made it practically impossible for him to procure human material to work with, so he turned his attention to the relation of malaria to birds. As said above, certain birds, notably sparrows, are highly susceptible to malaria, and using the same methods, Ross soon had the secret of the relation of mosquitoes to malaria .

When malaria-infested blood is drawn into the stomach of a mosquito, the sexual phase, that is, fertilization occurs in a few minutes. The fertilized egg then bores into the wall of the mosquito's stomach where the further development into spores occurs. These spores are then discharged into the body cavity of the insect from which they enter the salivary glands of the mosquito and are then discharged into the wound when the mosquito bites its victim. These spores then develop into the true amoeba-like parasites, enter red-blooded corpuscles, and thus initiate the malaria symptoms.

Ross' failure at first was due to his use of the wrong kind of mosquitoes. Mosquitoes of the genus Culex do not carry the species of malaria which affects man; the spotted-winged variety—those of the genus Anopheles—alone are to blame.

As soon as the definite relationship between mosquitoes and malaria was established it became relatively easy to control the disease. The main factors in control are, of course, obvious enough. Destroy the breeding places of mosquitoes and avoid being bitten by mosquitoes of the genus Anopheles. Mosquitoes lay eggs in water and the aquatic larvae are easily destroyed by pouring a thin film of oil over water containing them. The malarial mosquitoes are largely nocturnal in habit and all homes in malarial regions should be carefully screened.

Malaria is one of the few diseases for which there is an almost certain specific,—namely quinine.

Roy L. Abbott.

CARE OF LABORATORY EQUIPMENT

"We have good equipment, but no place to keep it arranged in order so that we have quick access to it." The above statement describes the condition under which some high school departments operate. A condition of this kind places extra work upon the teacher and uses valuable time that is needed in class room instruction.

Valuable equipment deserves a place where it can be properly stored, quickly found, and easily checked out to the students when needed. A store room should be provided. Perhaps, a vacant room, a hallway, or an unused corner of the laboratory might be remodeled by the pupils in the manual training department or by some member of the science classes. When this is done, the next procedure is to plan the arrangement of the shelves for the apparatus, chemicals, and other laboratory necessities. The shelves should be large enough for the storage of the different equipment for the maximum sized class. Next number these shelves in large numerals. Then, secure a record book and list the equipment and supplies alphabetically with the number of the shelf where each article is found. Clean up the equipment and transfer it to the new store room.

Once a year an inventory should be taken and the bulk of the equipment to replace that used up or broken may be ordered at this time. Record cards, desk equipment sheets, and other essential forms for the dispenser's and instructor's use may be prepared by students of the class on the mimeograph machine or

typewriter. The teacher should make the management of the department an instructive proposition for the student.

Now, at the close of the school year the apparatus should be cleaned, checked, and carefully stored ready for use next fall.

Harold E. Murphy.

THE CONSERVATION OF WILD FLOWERS

On almost any warm spring day when the first woodland flowers have made their appearance, it is a very common sight to see parties of children, and many older people as well, scouring the woods in search of wild flowers. On Sundays, in the vicinity of larger towns the writer has seen areas practically stripped of every blossom. Very often before the parties have left the woods the flowers have wilted and are thrown aside. Many flowering plants and ferns are dug up, too often with an insufficient amount of earth, and are set out in gardens only to die for lack of the natural conditions necessary for their best growth. These people are no doubt well meaning but do not appreciate the results of their activities. On the part of children, their natural desire is to possess for themselves whatever of beauty appeals to them and we should not be too severe in our criticism, especially when they are merely imitating their elders. It is probably selfishness or thoughtlessness which prompts the older people. Only rarely, in this state, are plants removed for commercial purposes, but in the eastern states nurserymen advertise that they can furnish wild plants in carload lots. One reason sometimes given to justify the wholesale picking of wild flowers is "we love them so", although the speakers do not for this reason remove arms or legs of their human friends. People also say, "if I don't pick them some one else will" or "I didn't pick enough to do any harm." People who would not think of pulling off branches from their city neighbor's trees or digging up his flower beds do not hesitate, when on a drive in the country, to help themselves to the trees or flowering plants in a farmer's woods. One of the most apparent results of the activities of these "nature lovers" is that many of our finest and rarest plants are disappearing from many localities where they formerly were common.

The nation is quite definitely committed to the principle of the conservation of our natural resources. The conservation of our forests is a definite policy of the government and of many private corporations, although there is still room for improvement. Protection of our songbirds is written into the laws of practically every state, and game animals are protected by both state and federal laws. The passenger pigeon passed out of the picture before sentiment for conservation became noticeable, although there maybe a question as to whether it is actually extinct. The bison narrowly missed extermination and is now found in a few protected natural areas as well as in public and private parks. The conservation of game animals has been strongly supported by sportsmen and the protection of songbirds has an economic basis in their value to agriculture. No one opposes the protection of these rare or valuable forms of wild life.

Wild flowers cannot be given protection on the same economic basis as is the case for game animals and birds. These plants do, however, have an importance, aside from their beauty, which often is not appreciated. As a part of the ground cover in the woods they aid in conserving moisture and preventing erosion. In uncultivated fields they serve to prevent erosion and by their death and decay enrich the soil. One reason for the slow progress of conservation of wild flowers is that the flowers are legally the property of the owner or leasee of the land and can be disposed of as he sees fit. On the other hand all birds and game animals are the property of the state and officers are provided for the enforcement of the laws. The usual theft or trespass laws would be sufficient if the owner would make complaint, which few will do. Wild flower laws are of little value because they contain no provision for enforcement. About