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ANTHROPOLOGY'S CONTRIBUTION TO INTER-RACIAL UNDERSTANDING¹

By Dr. HARRY L. SHAPIRO

AMERICAN MUSEUM OF NATURAL HISTORY

THERE still exists in our industrial societies a tendency, inherited from the past, to regard technological progress as wholly beneficent. We have become accustomed to hail enthusiastically every advance for its own sake or for the greater ease it brings into our personal lives, without consideration for its effect upon our society. We have grasped eagerly at the fruits of science regardless of their price. Now we are discovering that they have a price; that every advance of technology enhances our responsibilities whether we like it or not. The radio, the movie, the airplane have, or should have, taught us that technology may be beneficent, but may also serve evil purposes; that the acceptance of these productions can not remain superficial but must enter into and profoundly alter the organization of our societies.

¹ Address delivered at the Cranbrook Institute of Science on the opening of an exhibit on the races of man, January 21, 1944.

In no aspect of our lives as members of a complex industrial community, or as a nation in the modern world, has technology brought greater responsibilities than in our attitudes toward the various groups that make up our society, or toward the peoples that constitute mankind. It is a commonly observed truism that the world grows more interdependent, and that our society demands increased cooperation from all its members, as mechanization progresses. As for the future that lies ahead who can question that this process with its demands will continue? There is, therefore, every reason to believe that more cooperation rather than less will be required of us, if the structure of our society is to be preserved. Indeed, the very war in which we are now engaged may be said to be the result of an effort to substitute coercion, intolerance and slavery for our traditional ideals of cooperation.

SCIENTIFIC APPARATUS AND LABORATORY METHODS

A METHOD FOR PREPARING PERMANENT SLIDES OF THE OVA OF PARASITIC WORMS

THE aqueous media commonly used to prepare microscopic slides of ova of parasitic worms give rather fragile preparations which withstand classroom use poorly.¹ Yet these specimens must be mounted in water-soluble materials because dehydration and "clearing" either distort them beyond recognition or render them invisible.

In a limited series of tests of available water-soluble substances that might be used with some hope of improving durability of mounts, one formula of the gum acacia-chloral hydrate medium² has given satisfactory results, when used as indicated by the following directions.

(1) Prepare a series of dilutions of gum-chloral in 10 per cent. formalin starting with a 10 per cent. solution and increasing concentrations by 2 per cent. for each subsequent step, or make up each dilution as it is needed.

(2) Concentrate fecal suspensions that have been thoroughly fixed in neutral formalin until each drop of fluid contains 10 to 12 ova. Each cubic centimeter of this will yield about 10 slides.

(3) Pipette 5 cubic centimeters of the concentrated fecal suspensions into vaccine bottles of 15 cubic centimeter capacity. Next add an equal quantity of 10 per cent. gum-chloral-formalin, tilting the bottles to allow this fluid to run in along the lower side. In all dilutions of the series, gum-chloral is heavier than any fecal suspension tested and will occupy the lower half of the column of fluid. Do not shake the bottles or stir the contents.

(4) Cap the bottles and leave them at room temperature or in an incubator at 37° C. until the fecal material has completely settled. Then remove the clear fluid above the feces with a fine-pointed pipette attached to a vacuum pump, and add an equal volume of the next higher concentration of gum-chloral solution.

(5) Continue this process until the ova are suspended in full-strength gum-chloral medium. When the last sedimentation is complete and excess fluid removed, mix the contents of each bottle thoroughly before starting to prepare mounts.

(6) Use clean slides and cover glasses. Circular cover glasses 12 to 15 millimeters in diameter give better mounts than larger sizes. Squares are unsatisfactory for most specimens. Mounts are prepared by two persons working as a team; one transfers drops

of the mixture to the slides, the other adds the cover glasses. With some practice one will come to judge the size of drop which will spread completely under the cover glass without excess. For transferring the material to slides, a heavy platinum loop about 4 millimeters diameter is superior to a pipette. The loop delivers a drop of about the correct size with few air bubbles. Cover glasses must be applied quickly to the mounts. Otherwise the medium hardens and spreads poorly.

(7) Dry the mounts in a horizontal position in an incubator at room temperature. Any air bubbles under the cover glass usually are extruded during drying. Thereafter, slides may be treated as if prepared with balsam or clarite. The medium is readily soluble in water, however.

This schedule requires several months for completion, but actually the time given to the specimens is only the matter of minutes for each change of solution. Results amply compensate for the effort. By this method I have prepared mounts of the ova of *Schistosoma mansoni*, *Clonorchis sinensis*, *Fasciola hepatica*, *Diphylllobothrium latum*, *Hymenolepis nana*, *Taenia saginata*, *Ascaris lumbricoides*, *Trichocephalus trichiurus* and *Enterobius vermicularis*. In these slides small numbers of the ova of some species are distorted, but the majority remain intact and are seen in greater detail than in temporary mounts of formalin-fixed feces. The only failure thus far has been with hookworm eggs, all of which became badly distorted.

Adult *Necator americanus* and other small nematodes, mites, ticks, lice and the larvae and pupae of flies are easily infiltrated and mounted by this method. These organisms remain soft and are easily arranged on slides. When mounted under small round cover glasses, supports do not seem to be necessary.

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BOOKS RECEIVED

- ADAMS, ROGER. *Organic Reactions*. Volume II. Illustrated. Pp. v + 461. John Wiley and Sons. \$4.50.
STRAUSBAUGH, PERRY D. and BERNAL R. WEIMER. *Elements of Biology*. Illustrated. Pp. vii + 461. John Wiley and Sons. \$3.25.
THOMPSON, LAVERNE RUTH. *Introduction to Microorganisms*. Illustrated. Pp. xi + 445. W. B. Saunders Company. \$2.75.
WEIL, B. H. and VICTOR J. ANHORN. *Plastic Horizons*. Illustrated. Pp. 169. Jaques Cattell Press. \$2.50.

¹ E. V. Cowdry, "Microscopic Technique," Baltimore, 1943.

² W. Morrison, *Turtox News*, 20: 157, 1942.

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NEW WILEY BOOKS

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By HERVEY W. SHIMER, *Professor Emeritus of Paleontology*, and ROBERT R. SHROCK, *Associate Professor of Geology*; both at *Massachusetts Institute of Technology*.

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461 pages; 6 by 9; \$4.50

A NEW MANUAL FOR THE BIOLOGY LABORATORY

By BERNAL R. WEIMER, *Dean of the Faculty and Professor of Biology, Bethany College, West Virginia*, and EARL L. CORE, *Professor of Botany, West Virginia University*.

Carefully selected exercises illustrating the general principles of biology. It is intended to accompany the textbooks "General Biology" and "Elements of Biology" by Strausbaugh and Weimer, or any other general textbook in biology. Special care has been used in the selection of specimens for study, and of the large number of questions scattered throughout the manual. The inclusion of numerous demonstrations and optional exercises adds flexibility to the manual and makes it adaptable to a variety of courses. Sheets of prepared drawings, as well as sheets for drawing by students, are included at the back of the book. *Ready in May.*

Approx. 214 pages; 8½ by 11; Probable price, \$2.00

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