

# to the editor

## Canal routes

Apparently not interested in the multinational approach so encouraged by AID, nor interested in the extremely close ichthyological relationship between the Atrato of Colombia and the Chucunaque basin of Panama, nor interested in the biological advantages of connecting estuarine with estuarine faunas via a fresh-water canal rather than estuarine and marine faunas via a salt-water canal, advocates of a sea-level canal talk almost entirely about Routes 10, 14, 17 and 25 (SN: 12/12/70, p. 445).

Having walked from Paya to Palo de las Letras, I can attest that the Chucunaque-Cacarica divide along this route is almost indistinguishable, and probably less than 100 meters above mean sea level. This route would connect the Chucunaque of Panama with the Atrato of Colombia, furnishing a great deal of fresh water to act as a barrier between the organisms from the Atlantic and Pacific Oceans. Granted, there are many geminate fresh-water species of fish in these two basins, but reunion of these endemics would not seem to jeopardize the marine fisheries of either country.

Another binational route which I have studied is the Rio Balsa (also a tributary of the Chucunaque)—Salaqui (also a tributary of the Atrato) route, which also has some natural hot springs that could be tapped to add a thermal barrier to the interoceanic migration of marine organisms. Here then we would have the heat and the fresh water advocated as a barrier by Sanders *et al.* (SN: 1/16/71, p. 52) without resorting to a thermonuclear source of heat as has been suggested to the canal commission. Let us assume that the Bayano hydroelectric project, now in progress, will provide sufficient energy for some time to come, rendering a thermonuclear plant, at least for the present, unnecessary.

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## Otolith functioning

The appearance of your newsbrief on my research, "Pigmentation related to balance" (SN: 1/2/71, p. 15), was most flattering, and I have already received one especially interesting, long-distance phone call as a result of it.

The newsbrief is basically accurate, but two statements are misleading: "the animals lack pigment in their inner ears, and apparently this causes faulty functioning of the otoliths . . . a reservoir for manganese essential to proper otolith functioning." Indeed, the pigment is lacking in the mutant animals, and the otoliths do not function properly, but this is due to a congenital absence of otoconia (crystals) normally present in otoliths. I have no reason to suspect that manganese is necessary for functioning of morphologically normal otoliths, but it is essential for the normal development of otoliths. There is no reference in the newsbrief to the developmental aspect of this problem.

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## films OF THE WEEK

**BIOLOGY OF AN EARWIG.** 16mm, color, English or French soundtrack, 19 min. The behavior of the sand earwig, *Labidura riparia*, commonly found on the coast. Includes shots of preying, mating, dance, nest-digging, care of the eggs by the female, hatching, life of the young in the nest, growth and molting. Audience: high school or college biology. Rental \$6 from Society for French American Cultural Services and Educational Aid, 972 5th Ave., New York, N.Y. 10021.

**AN AFRICAN COMMUNITY: THE MASAI.** 16mm, color, sound, 16 min. The nomadic Masai of the highlands of East Africa lead lives shaped to a great degree by their environment. Grazing lands for their cattle are affected by weather and even by the health of grazing wild animals. Film illustrates the Masai's dependence on the land, their adaptation to the environment, and their family and tribal interdependence, as well as the remarkable dignity of a unique people. Audience: elementary, high school. Purchase \$150 from BFA Educational Media, Dept. SN, 2211 Michigan Ave., Santa Monica, Calif. 90904.

**THE ADOLESCENT ILIAD.** 16mm, color, sound, 25 min. Shows the Adolescent Program at Medoncino State Hospital in California where children (ages 13-17) with severe behavioral problems (drug abuse, runaways, stealing) are treated in a "family" situation with hospital staff members as surrogate parents. An innovative school program helps "turn youngsters around." Includes group and individual therapy, "The Game," and a classroom sequence with students acting an African courtroom situation later compared with their own court experience. The medical director evaluates the program.

Audience: high school, college, general adult, and of special interest to counselors, mental health workers, teachers, social workers and probation officers. Purchase \$250 or rental \$20 from Lawren Productions, Dept. SN, P.O. Box 1542, Burlingame, Calif. 94010.

**OPERATIONS WITH WHOLE NUMBERS.** 16mm, color, sound, 22 min. Explores procedures for interrelating addition and subtraction. Shows materials, methods and strategies which are particularly effective. Attention is focused on the use of multiple techniques for improving instruction in multiplication. Emphasizes algorithms which have been found to be particularly effective. Stresses the use of materials. Audience: teachers. Purchase \$78.25 or rental \$10 from National Audiovisual Center, Dept. SN, National Archives and Records Service, Washington, D.C. 20409.

**THE WILD CELL.** 16mm, color, sound, 27 min. Cancer still remains one of the greatest medical mysteries of today. Film provides up-to-date review of what is known about cancer—its diagnosis, treatment and causes. Recent research in each of these aspects is presented and discussed in light of its contribution to the elimination of the disease. We see how clues gathered by scientists studying specific factors of cancer are accumulating and offer a hope that the disease will have a cure some day. Some of the more interesting concepts developed are geographical differences, the role of viruses, the possibility of immunization, the role of genetics and chemotherapy. Audience: general. Purchase \$300 or rental \$16 from McGraw-Hill Films, Dept. SN, 330 W. 42nd St., New York, N.Y. 10036.

**BEHAVIOR MODIFICATION IN THE CLASSROOM.** 16mm, color or b&w, sound, 24 min. Offers opportunity to observe the use of operant conditioning and modeling procedures to help children become more task-oriented. Successful application in three classroom situations at different primary school grade levels is demonstrated. Contrasts behavior before and after the introduction of behavior modification techniques; specifies the need for determining appropriate rewards and for generalizing reward from tangible objects to verbal and nonverbal reinforcement; and details methods of training teachers in the use of operant-conditioning techniques by means of role modeling procedures. Audience: teachers, psychologists, counselors. Purchase color \$240 or b&w \$145, and rental color \$15.50 and b&w \$11 from Extension Media Center, Dept. SN, University of California, Berkeley, Calif. 94720.

**VILLAGE LIFE IN TONGA.** 16mm, color, sound, 20 min. Shows the contemporary life patterns in the "Friendly Isles." From the early explorers to the present day, all visitors have been charmed by the friendly Tonga islanders. They seem to have found the best of both worlds—accepting some of the benefits of modern civilization without losing the integrity of their Polynesian culture. Audience: high school, general. Purchase \$230 from ACT Films, 35 W. 45th St., New York, N.Y. 10036.

Listing is for readers' information of new 16mm and 8mm films on science, engineering, medicine and agriculture for professional, student and general audiences. For further information on purchase, rental or free loan, write to distributor.