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films OF THE WEEK

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

THE FORGOTTEN AMERICAN. 16mm, color, sound, 25 min. About the forgotten Americans who have become aliens in their native land—the American Indian. Filmed on location in the Southwest and in urban Indian communities of Los Angeles and Chicago, it sets forth the hopelessness and despair, minimal food and housing, inadequate educational facilities and limited employment opportunity for Indians. Audience: high school, university, church and adult groups. Purchase \$275 from Carousel Films, 1501 Broadway, New York, N.Y. 10036.

THE FORMATION OF THE L. E. CELL. 16mm, b&w, English sound, 11 min. Dynamic study of the formation of the L. E. or Hargraves cell (diagnosis of acute disseminated Lupus erythematosus). Action of antinuclear antibodies on the polymorphonuclear neutrophil; chemotaxis of the polynuclears (formation of rosettes); preferential phagocytosis in the antibody nucleus complex (formation of the L. E. cell). Audience: medical, biological. Service charge \$5 for loan from Society for French American Cultural Services and Educational Aid, 972 Fifth Ave., New York, N.Y. 10021.

HOW MANY MEALS TO THE MOON? 16mm, color, sound, 22 min. Shows solutions developed for feeding men in space. Includes flexible container from which foods can be squeezed directly into the mouth, a germicide pill for leftovers to retard putrefaction, and a special starch-like substance which prevents crumbs but allows astronauts to enjoy familiar food textures. Audience: schools, adult groups. Free loan from Modern Talking Picture Service, 1212 Avenue of the Americas, New York, N.Y. 10036 (Produced for the Whirlpool Corp.).

LAND AND WATER CRABS. 16mm, color, sound, 19 min. The multiplicity of size, structure and adaptations of land and water crabs is communicated with close-up photography and microscopy of many species. Illustrates the crab's primary method of defense (hiding), the process of shell removal to make room for growth, reproductive habits, and the development of the young into mature adults. Latin and common names of each species are given. Audience: elementary, high school. Purchase \$225 from Fleetwood Films, 34 Macquesten Parkway S., Mount Vernon, N.Y. 10550.

SEED TRAVELERS. 16mm, color, sound, 10 min. Shows how nature has endowed most plant seeds with devices for self-propelled propagation; why this is necessary; how seeds travel by land, water, air, and on the backs of animals or man's clothes. Audience: elementary. Purchase \$120 or rental \$6.50 per day or \$13.00 per school week from Gateway Productions, 1859 Powell St., San Francisco, Calif. 94133.

THE STORY OF ELECTRICITY—THE GREEKS TO FRANKLIN. 16mm, color or b&w, sound, 13½ min. Reenactments of the key advances in man's knowledge of electricity are told in the actual words of the discoverers, from the early Greek's elektron or amber to Franklin's single-fluid theory. Ideas and inventions of William Gilbert, Stephen Gray, Francis Hauksbee, Pieter van Musschenbroek, and finally Franklin are illustrated. Audience: intermediate, junior high. Purchase color \$162.50 or b&w \$81.25 from Coronet Films, 65 E. S. Water St., Chicago, Ill. 60601.

LETTERS

to the editor

Entrancing anomaly

The article entitled "Red Shift Anomaly" (SN: 11/30, p. 554) is positively entrancing. It is a rare delight to find what appears to be some support for one's own long-held opinion on a difficult subject which is, thus far, beyond direct experimental investigation. The presumed relationship between velocity, red shift and distance in astronomical measurements and calculations is just that—presumptuous. To have considered such a process as a possibility was certainly not unreasonable: To have assumed the process to be essentially unvarying throughout the universe, and to have used that assumption as the basis for actual measurements, represents a process for which an adequate defense would be most difficult to present. Such a construction of the universe is painfully similar to the process by which many of the ancients contemplated an earth which certainly was not curved (at least not so far as one could see from a constrained vantage point) and concluded the obvious: The earth is flat.

To see the dangers inherent in the assumptions based on the apparent red shift, it is necessary only to consider that we simply do not know the physical/chemical properties of matter in, for example, truly massive gravitational fields such as those which probably exist at discrete points in the universe. It is not unthinkable that basic electronic processes occur at an altered rate, upsetting even the lapse-rate of time as measured by an atomic clock. That is, the time base changes, and where then is the red shift? Again, it is possible that in an environment of essentially unidirectional continuous high intensity radiation analogous to the solar wind but constituting the equivalent of a continuous "solar hurricane"—there

(See p. 6)

SCIENCE NEWS

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Subscription rate: 1 yr., \$7.50; 2 yrs., \$13.50; 3 yrs., \$19.50. Special trial offer: 39 weeks, \$3.97. Single copy, 25 cents. No charge for foreign postage. Change of address: Three weeks' notice is required. Please state exactly how magazine is addressed. Include zip code.

Printed in U.S.A. Second class postage paid at Washington, D. C. Established as Science News Letter® in mimeograph form March 13, 1922. Title registered as trademark U. S. and Canadian Patent Offices. Indexed in Reader's Guide to Periodical Literature, Abridged Guide and the Engineering Index. Member of Audit Bureau of Circulation. UNSOLICITED MANUSCRIPTS will not be returned unless accompanied by a stamped, self-addressed envelope.

Published every Saturday by SCIENCE SERVICE, Inc., 1719 N St., N.W., Washington, D. C. 20036. North 7-2255. Cable Address: SCIENSERV.

ADVERTISING

L. D. Young, Advertising Director, SCIENCE NEWS, 1719 N St., N.W., Washington, D. C. 20036. Phone 202-667-8945.

Advertising Representatives: SCRIPPS-HOWARD NEWSPAPERS. General Advertising Department: 200 Park Ave., New York, N.Y., TN 7-5000; 400 N. Michigan Ave., Chicago, Ill., SU 7-3355; Suite 211, Braniff Building, Dallas, Tex., PL 7-3847; 908 E. Northland Tower, Southfield, Mich., 444-4595; 6363 Wilshire Blvd., Los Angeles, Calif., OL 3-0026; Room 1522, Philadelphia National Bank Building, Philadelphia, Pa., LO 3-6275; 100 California St., San Francisco, Calif., 989-5570; Suite 417, 3384 Peachtree Rd., N.E., Atlanta, Ga. 261-1571.

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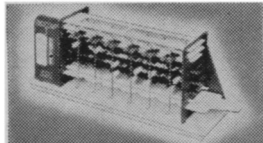
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(Letters from p. 4)

occurs something akin to permanently-maintained polarization on an atomic scale. What, then, would be the meaning of a red shift? We should not expect that matter should behave in other environments in the fashions which are familiar to us in our limited view. In fact, the conditions which we know directly may actually represent one of the more extreme conditions existing in the universe.

It is encouraging to see, at last, the beginning of developments which may lead to reassessment of constructions based on the so-called red shift and ultimately, as one hopes, to a clearer understanding of the physical universe.

Vere Maffet
Technical Director
Peerless Photo Products, Inc.
Shoreham, N.Y.

Population

From what I have read over the past several years I feel that the Rev. Guy J. Cyr is correct in his contention in his letter in the Nov. 9th issue that presently available technic, properly applied, would permit a world population of 20 billion people, but I wish he had given some answer to the question of which comes first, the babies or the applied technology? The tone of his letter seems to indicate a belief that if we make it babies first, the technology will follow, but lagging well behind, which would be rough on a lot of people for a long time. On this last point, Rev. Cyr might do well to look over the lead article in SCIENTIFIC AMERICAN for November. He might find helpful also the book "The Next Ninety Years" by Prof. Harrison Brown and other Caltech faculty members, concerning the matter of getting the technology started in countries that do not have it.

Paul Estle
Cohoe, Alaska

Draft women

I strongly agree with Betty Friedan (SN: 11/23, p. 516) that we must have equality for women and an end to sexual discrimination. There is a great personal and social loss involved in the waste of their talent through a lack of opportunity for implementation.

But it must be recognized that inherent in an end to sexually based discrimination is the end of bias in the demands placed upon males, the foremost of these being military conscription. If equality of opportunity is to be given women, then either they must be willing to accept the same military requirements as men, or these requirements must be dropped for men as well.

John H. Munz
Urbana, Ill.