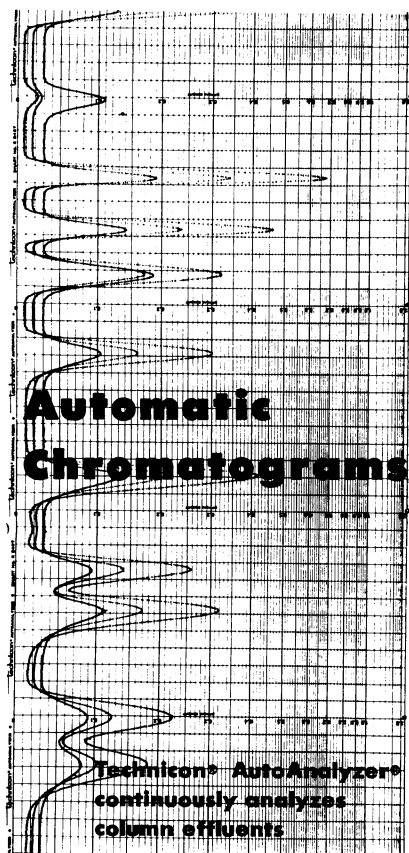




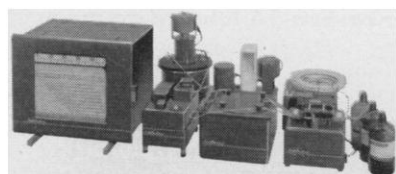
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Peter Klopfer's comments concerning my article are worth noting but do not precisely relate to my findings. Certainly we obtained auditory imprinting in the mallards, as well as in other species, since sound is used in our presentation along with the visual object. What we were not able to demonstrate for the mallard was *auditory imprinting in the egg*.

ECKHARD H. HESS
University of Chicago, Chicago, Illinois

Strontium-90 Levels and Wheat

In "Strontium-90 in man III" by Kulp, Schult, and Hodges [*Science* 129, 1249 (1959)], "the widespread flow of wheat and powdered milk from the Northern to the Southern Hemisphere" is suggested as a possible explanation for the smaller difference in the strontium-90 levels in bone than in recorded fallout between the two hemispheres.

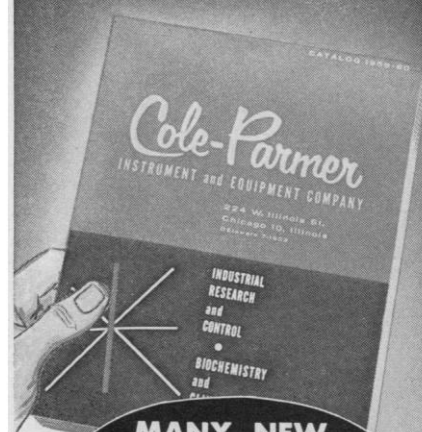
As related to wheat, at least, this is highly questionable. Argentina and Australia are two of the world's principal wheat exporters. A cursory review of the *FAO World Grain Trade Statistics* indicates that in 1956-57, the latest crop year for which full data are available, movement of wheat (including the wheat equivalent of flour) from the Northern to the Southern Hemisphere was on the order of 1220 thousand metric tons, as compared with a movement of 4300 thousand metric tons of Southern Hemisphere wheat into the Northern Hemisphere. Another 2500 thousand metric tons moved between Southern Hemisphere countries, the largest share of this local trade being represented by Argentine exports to Brazil (1040 thousand metric tons) and Australian exports to New Zealand (340 thousand metric tons). Indonesia, Singapore-Malaya, Ecuador, and the Belgian Congo as well as Brazil are here considered Southern Hemisphere countries, although part of each is in the Northern Hemisphere.

If strontium-90 is moving across the equator in wheat, it would appear probable that the net movement is northward rather than southward.

JAMES J. PARSONS
Department of Geography,
University of California, Berkeley

We appreciate the correction of Parsons showing that the net flow of wheat, if not of powdered milk, is from the Southern to the Northern Hemisphere. Flow in either direction is, of course, equally effective in bringing the strontium-90 content of human bone toward a mean, so that the North-South ratio of strontium-90 concentration in human

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bone is less than the North-South ratio of cumulative fallout.

The case of Australia is puzzling since the Australians subsist almost entirely on their own foodstuffs yet the average bone level in 1957-58 ($0.20 \mu\text{c}$ of Sr^{90} per gram of calcium) was equal to that in the United States. Other climatic and agricultural factors must play a more dominant role here if the bone sampling is representative (1).

J. LAURENCE KULP
ARTHUR R. SCHULERT
ELIZABETH J. HODGES

*Lamont Geological Observatory,
Torrey Cliff, Palisades, New York*

Note

1. This is Lamont contribution No. 372.

Church-Affiliated Colleges

Donald L. Thistlethwaite [*Science* 130, 71 (1959)] has reported that religious affiliation on the part of a college is negatively related to encouraging Ph.D. scholars in the natural sciences.

It has occurred to me that this factor may have an important bearing on his ranking of institutions by geographical region, especially since his sampling is so extensive and since some of these regions

have a much higher proportion of church-supported institutions than do others.

An illuminating extension of this study would be a subclassification of geographical ranking according to whether or not the institutions included in the sample have religious affiliation.

JAMES R. KUPPERS
Grifton, North Carolina

To test the hypothesis suggested by Kuppers I have done a two-way analysis of variance. In order to avoid cells with missing entries, it was necessary to combine the New England and Middle Atlantic regions. Thus we have a 2 by 4 classification: presence versus absence of religious affiliation and separation by four regions. The results indicate significant differences in the production of graduates who attain the Ph.D. in the natural sciences ($p < .01$) between geographical religious-affiliation groups, but no significant interaction. The nonsignificant interaction indicates that the geographical differences have not been found to vary according to whether or not the colleges have religious affiliations.

DONALD L. THISTLETHWAITE
*National Merit Scholarship Corporation,
Evanston, Illinois*

Meetings

Forthcoming Events

October

14-16. Parenteral Drug Assoc., annual conv., New York, N.Y. (H. E. Boyden, Parenteral Drug Assoc., 130 E. 59 St., New York 22.)

14-17. American College of Chest Physicians, 25th, Albuquerque, N.M. (M. Kornfeld, 112 E. Chestnut St., Chicago 11, Ill.)

15-16. American Ceramic Soc., Glass Div., Wernersville, Pa. (F. P. Reid, ACS, 4055 N. High St., Columbus 14, Ohio.)

15-17. Academy of Psychosomatic Medicine, Cleveland, Ohio. (B. B. Moss, Suite 1035, 55 E. Washington St., Chicago 2, Ill.)

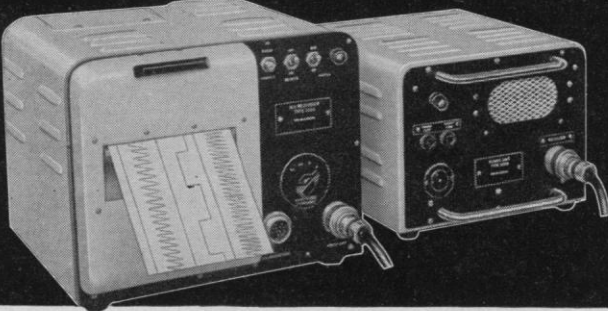
15-17. National Soc. of Professional Engineers, fall meeting, Seattle, Wash. (P. H. Robbins, NSPE, 309 Bancroft Bldg., Univ. of Nebraska, Lincoln.)

16-17. Association of Midwest College Biology Teachers, conf., Notre Dame, Ind. (G. R. Bernard, Dept. of Biology, Univ. of Notre Dame, Notre Dame, Ind.)

17-18. American Acad. of Psychotherapists, 4th annual conf., New York, N.Y. (AAP, 30 Fifth Ave., New York 11.)

17-25. Plastics Industry, intern. fair, Düsseldorf, Germany. (Nordwestdeutsche Ausstellungs Gesellschaft (NOWEA), Ehrenhof 4, Düsseldorf.)

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