Comments and Communications

Late Pleistocene Dates Derived from Radiocarbon Assays

Current research on natural radiocarbon (LIBBY, W. F., *et al. Science*, 1949, 109, 227) presents an opportunity to learn the actual dates of origin of carbon-bearing material less than about 35,000 years old. Such material includes, among other substances, buried soils, wood, charcoal, bone, and calcareous shells.

If adequate amounts of this material are collected from horizons of accurately known stratigraphic position and are assayed, the dates of these horizons (if less than about 35,000 years old) can be determined. The importance of such dating for establishing the chronology of the later part of the Wisconsin age of the Pleistocene epoch is obvious.

In particular, if the Mankato drift can be dated by this method, rough dates can be obtained for earlier Pleistocene glacial stages. Kay's estimates of the dates of earlier Pleistocene drift sheets were obtained by comparing the depth of chemical decomposition of each of these drifts with the decomposition of the Mankato drift, for which an age of 25,000 years was assumed (cf. FLINT, *Glacial geology and the Pleistocene epoch*, 1947, p. 399). The application of radiocarbon assay to the Mankato drift should improve Kay's estimates materially.

This research on natural radiocarbon is being conducted at the Institute for Nuclear Studies, University of Chicago, under the direction of W. F. Libby. Assays of carbon-bearing material can be made there promptly, if the material has great enough stratigraphic importance.

For the present, material for assay is being selected in collaboration with the Committee on Radioactive Carbon 14, appointed by the American Anthropological Association, under the chairmanship of Frederick Johnson. The writer is serving on the Committee as member for geology. A number of projects, involving dates that are especially desired, have been set up. Those having primary significance for anthropology are named Early Man, Peru, Central and Northern Mexico, Mesopotamia and Western Asia, Scandinavia and Western Europe, Yukon-Alaska, California-Oregon, Hopewell-Adena, and Southeastern United States. In some of these projects the dating of archaeological material will also have direct significance for Pleistocene geology.

Geologic material suitable for assay is less abundant and less intensively collected than archaeological material. The committee believes, however, that when geologists having access to such material are acquainted with the general problem and with sampling requirements in particular, they will very quickly supply samples of geological importance.

Geologists working on late-Pleistocene stratigraphy are therefore urged to look for material suitable for assay. The requirements at present are as follows:

1. The minimum quantity of wood for assay is 1½ lb (dry weight). The minimum for shells is 4 lb because of their smaller content of carbon.
2. An exact description of the locality and of the stratigraphic horizon from which the collection is made should be sent with the material, and the basis of stratigraphic dating of the horizon should be stated. Detailed photographs would also be helpful.
3. Evidence that the material is indigenous to the horizon from which it was collected, rather than having been derived from some older horizon, is important.
4. Materials derived from two different horizons, each of known stratigraphic date superposed in vertical sequence, are especially desired for the purpose of checking the accuracy of assay.
5. Two or more pieces of material composed of different substances (e.g., wood and bone), collected at different points in a single horizon of known stratigraphic date, are also especially desired for assay checking.

Any geologist possessing or having access to material that meets these requirements is urged to send the writer a full description of it. Please do not send the material.

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A Note on Inexpensive One-Way Vision Material

Many psychologists are interested in effective but inexpensive means of assuring one-way vision for observation. The new commercial one-way vision mirror glass is far more effective and less streaky than earlier half-silvered mirrors, but remains very expensive. White painted screening, while cheap, is not totally effective in barring vision into the observation room or booth.

Some time ago the use of colored cellophane for this purpose was suggested (PRATT, J. G., *Amer. J. Psychol.*, 1937, 49, 309). While this note was in press a similar one was described: (GRUMMON, D. L. *Amer. Psychologist*, 1949, 4, 114). However, in our experience, when enough layers of cellophane were used to bar vision in the wrong direction vision out of the booth tended to be obscured to an undesirable degree. For several years now, we have successfully used uncolored, silvered cellophane for one-way vision material.[1] In our use, the material is placed on the observation room side of a double plate-glass window opening on a brightly lighted experimental room. The cellophane is held in place with strips of scotch tape, so that the observation room may be converted rapidly to a camera booth for filming through the window.

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[1] We have obtained this material under the trade name "Hy-Siltone" in 50-ft rolls, 20-in. wide, for $2.50 from the Hy-Sil Manufacturing Company, Revere, Mass.