sine and derivatives. Furthermore, the presence of HMC in virus DNA stabilizes this polymer to depolymerases and phosphatases. This is owing to the addition of glucose to the hydroxymethyl group, which then inhibits cleavage of phosphate esters of HMC desoxyriboside. Thus the formation of HMC not only serves to switch host metabolism to virus production, but associated structures assist the survival of viral DNA in the host.

North Pacific Survey

In July, August, and September 1955 nearly 20 agencies from Japan, Canada, and the United States combined their facilities to make a great synoptic oceanographic survey (called NORPAC) of the North Pacific Ocean [*Science* **121**, 794 (1955)]. Such coverage has long been needed to provide background knowledge of hydrography for studies of fisheries problems. Approximately 20 large vessels and many small ones participated in the program.

The enormous gyral of the Pacific Ocean had been studied before in piecemeal style, but the independent efforts were either made on too small a scale or else were made over too long a period of time for their results to be used effectively in determining the currents and transport of water. Contiguous cruises made by the Pacific Oceanographic Group in Canada and the California Cooperative Oceanic Fisheries Investigations in August 1950, and jointly by the latter and the Pacific Oceanic Fishery Investigations of the U.S. Fish and Wildlife Service in Hawaii in January 1954, had confirmed the belief that great advantages were gained by studying large oceanic areas in short periods of time because a survey of short duration would avoid inclusion of seasonal changes in ocean currents in the measurements.

The proposal for a large-scale, short-duration oceanographic survey of the North Pacific Ocean was made at the fifth Pacific Tuna Conference in November 1954, which was attended by all the agencies that subsequently took part in the cruise except for those from Japan, and it was immediately decided to try to make such a survey. Various Japanese scientists were asked whether or not the Japanese would participate, and they answered through K. Suda of the Japanese Hydrographic Office, at once agreeing to take part.

At intervals of from 20 to 200 miles, water sampling bottles and thermometers were lowered from the surface to depths varying from 1200 to 6000 meters. Water samples were drawn and immediately measured for dissolved oxygen content and inorganic phosphate and, in some cases, for silicate. Additional samples were drawn for later measurement ashore of salinity, deuterium, and level of radioactivity.

Some vessels carried sonic apparatus so that the depth of the ocean could be continuously recorded. Transparency was measured by lowering secchi disks on all daylight stations. Using towed geomagnetic electrokinetographs, eight of the survey vessels recorded surface currents. At intervals between hydrographic casts, temperature-and-depth data were obtained by lowering bathythermographs.

The biological program consisted of several parts. Net hauls of zooplankton and phytoplankton were taken from various depths down to 1000 meters; small creatures such as saury, squid, sunfish, and others were observed and netted at night while the vessel was not under way; many vessels trolled; and daylight observations of birds, fish, and mammals were made and recorded. It is anticipated that the results of this survey will be immediately useful to two new pelagic fishery investigations in the North Pacific. These are the offshore salmon investigations being conducted by Japan and the United States under the auspices of the North Pacific Fishery Treaty and the offshore albacore studies that are being carried out by the Pacific Oceanic Fishery Investigations in Hawaii and the fishery agencies of California, Oregon, and Washington. These investigations have already discovered large offshore concentrations of salmon and albacore. The ecological basis for the summer distribution of these populations should be revealed by analysis of the observations made during NORPAC.

In area covered, number of stations occupied, number of observations made, and in samples collected, this is the largest oceanographic survey ever carried out in such a short period (most of the data were taken in August, although a few ships began in July and did not return until mid-September). Processing of the hydrographic data has begun, and it is expected that the preliminary results of the observations will be available in March 1956.

African Honey-Guides

A long-term study of the behavior of honey-guides, African birds distantly related to the American woodpecker, is described by Herbert Friedmann, curator of birds at the U.S. National Museum, in a bulletin just issued by the Smithsonian Institution. The birds guide men, baboons, and ratels (honey badgers) to the nests of wild honeybees.

Friedmann has observed at least 23 instances of the guiding habit and has collected much other well-authenticated data from African associates. Friedmann describes the behavior, which he says is purely instinctive, as follows:

"When the bird is ready to begin guiding, it either comes to a person and starts a repetitive series of churring notes or it stays where it is and begins calling. . . . These churring notes are very similar to the sound made by shaking a partly full, small matchbox rapidly sidewise. . . .

"As the person comes to within 15 or 20 feet, . . . the bird flies off with an initial conspicuous downward dip, and then goes off to another tree, not necessarily in sight of the follower, in fact more often out of sight than not. Then it waits there, churring loudly until the follower again nears it, when the action is repeated. This goes on until the vicinity of the bee's nest is reached. Here the bird suddenly ceases calling and perches quietly in a tree nearby. It waits there for the follower to open the hive, and it usually remains there until the person has departed with his loot of honeycomb, when it comes down to the plundered bees' nest and begins to feed on the bits of comb left strewn about. The time during which the bird may wait quietly may vary from a few minutes to well over an hour and a half."

The bird appears to have a peculiar ability to digest wax. Friedmann, with various collaborators, is now carrying out a study of the mechanism of wax digestion.

Australopithecines

Chiefly on the basis of the three hipbones thus far discovered, it has been widely assumed that the early Pleistocene primates of South Africa, the Australopithecines, were fully erect terrestrial bipeds that walked essentially like man. Using the split-line technique, Lois W. Mednick has recently compared the hipbones of modern man and chimpanzee and has applied the results of her study in an analysis of the Australopithecine pelvis [*Am. J. Phys. Anthropol.* **13**, 203 (June 1955)].

The iliac tubercle and associated pillar of bone are well developed in man but lacking in the chimpanzee. These structures, which are regarded as of prime importance in maintaining an erect, bipedal posture, are but poorly developed in the Australopithecines. The findings suggest that the Australopithecines could not balance themselves as well as man and were still in the process of adapting to erect progression.

Mednick thinks that these animals may represent a transitional stage of bipedal adaptation that never reached its culmination; on the other hand, she thinks it is also possible that they may represent a stage that developed into man. It may

be noted that this new evidence—which indicates that these interesting but controversial fossils were not fully adapted, truly erect bipeds—agrees with other evidence from the pelvis, notably the structure of the ischium and the iliac sacral surface, as well as with evidence that has been secured by detailed studies of other parts of the postcranial skeleton and the skull.—W. L. S. JR.

News Briefs

■ To enable the countries of Asia to study the social implications of the economic changes now taking place there—in particular, technological improvements and industrialization—the United Nations Educational, Scientific and Cultural Organization is to open a regional research center at Calcutta this month. Details of this proposal, first made at the Montevideo General Conference last December, have been approved by the executive board of UNESCO.

The Indian Government, which offered to act as host country, has promised to contribute $35,000 a year to this center, which will be financed from UNESCO's normal budget. The cost of the first year's operation will be about $150,000.

Ten Asian countries sent delegates to the advisory meeting that was held in New Delhi last September at which recommendations on the functions of the center were formulated. Afghanistan, Burma, Ceylon, India, Indonesia, Nepal, Pakistan, the Philippines, Thailand, and the Malaya-British Borneo group of associated member states will take part in the work of the new center, which is to be known as the Research Center on the Social Implications of Industrialization in Southern Asia. It is also open to other countries of South Asia. Not only will this center undertake active research, but it will also serve as a training center for social scientists; thus it will provide participating countries with the resources for future study and research.

■ The National Science Foundation and the National Academy of Sciences–National Research Council have recently published *Soviet Professional Manpower: Its Education, Training, and Supply* by Nicholas DeWitt of the Russian Research Center, Harvard University. The study, based largely on published Soviet sources, was undertaken with the support of the NAS–NRC and the National Science Foundation. It should prove useful to those who wish to obtain information about the role of the Soviet professional labor force. Information and data are given on the operational features of the Soviet educational system, factors affecting the quality of general and specialized education during the last three decades, and the supply of trained specialized manpower in the U.S.S.R.

Scientists in the News

JESSE E. HOBSON, director of the Stanford Research Institute, has announced that he will resign early in 1956. Another change at SRI is the appointment of JOHN I. YELLOTT as an assistant director. For the past 10 years he has been director of research for the Locomotive Development Committee of Bituminous Coal Research, Inc. of New York.

Yellott will head the development of the institute's solar energy research program in cooperation with the Association for Applied Solar Energy. He will be posted in Phoenix, Ariz., where he will operate out of SRI's Mountain States Division offices.

BUELL W. BEADLE has joined Southwest Research Institute's staff as manager of biochemistry research. He was formerly associated with George W. Gooch Laboratories in Los Angeles, Calif., where he was executive vice-president and general manager of the laboratories that serve the feed, food, fertilizer, and fats and oils industries.

BEVERLY W. DUNCAN, formerly chief metallurgist for Alloy Precision Castings Company, Cleveland, Ohio, has been appointed head of research and development for Misco Precision Casting Company, Whitehall, Mich.

JOHN BIESANZ, associate professor of sociology and anthropology at Wayne University, has been awarded a Smith-Mundt professorship of sociology and anthropology at the University of San Carlos in Guatemala City, Guatemala. He will leave at the end of this semester and will return to Wayne in September.

FRANCIS E. COUNCIL, a colonel in the Army Medical Corps, has been appointed Army deputy director of the Armed Forces Institute of Pathology. The appointment has been made pending the retirement of DWIGHT M. KUHNS. Council will continue serving as chief consultant in pathology and allied sciences to the Surgeon General of the Army.

ROLAND J. DAHL, who since 1930 has been associated with the E. R. Squibb and Sons division of the Olin Mathieson Chemical Corporation, has been appointed director of research and development. He succeeds William A. Feirer, who has resigned from active duty and who becomes a special consultant to the Squibb division.

PERCY W. OTT is retiring as a member of the Ohio State University engineering faculty after 36 years of service. For 18 years he has been chairman of the department of engineering mechanics. Another retirement is that of LOUIS H. BURGWALD, who has been in the dairy technology department for 26 years. Each man has received the title of professor emeritus.

DAVID G. FREIMAN, associate professor of pathology at the University of Cincinnati, will resign on 31 Jan. to become pathologist-in-chief and director of laboratories at Beth Israel Hospital, Boston, Mass., and clinical professor of pathology at the Harvard University Medical School.

EVERETT L. ELLIS, associate professor of wood technology at the University of Idaho, has been appointed associate professor of wood technology in the University of Michigan School of Natural Resources, effective in the fall of 1956.

D. F. WATERHOUSE, assistant chief of the division of entomology, Commonwealth Scientific and Industrial Research Organisation, Melbourne, Australia, is visiting the Connecticut Agricultural Experiment Station for 6 months. He will conduct original investigations on the digestion of wax by insects.

RALPH E. BENNETT, formerly engaged in microbiological research at the University of Pennsylvania, has been appointed head of the microbial biochemistry laboratories at the Squibb Institute for Medical Research, New Brunswick, N.J.

BETTY J. MEANS, who for a number of years supervised the sterility testing program in the control laboratories of Merck and Company, has joined the microbiology staff at the Food Research Laboratories, Inc., Long Island City, N.Y.

ISAAC RUCHMAN, formerly an assistant professor in the department of bacteriology, University of Cincinnati, has joined the research laboratories of the Wm. S. Merrell Company, Cincinnati, Ohio.

EMORY LEON CHAFFEE, emeritus professor of physics and former chairman of the department of engineering, science, and applied physics at Harvard University, has joined the staff of Frederick G. Keyes, Inc., Cambridge, Mass., as a consulting associate.

RICHARD J. STULL, who since 1948 has held a statewide post in the University of California as director of hospitals and