monoxide from cigarette smoke. At room temperature hopcalite does not oxidize many other substances.

The desirability of large-scale, cooperative epidemiologic studies was brought up by Hammond and echoed by others. It is likely that several hundred thousand people who live and work in the same area will need to be studied in order to see what the effects of both environmental pollution and cigarette smoking might be. Among other new problems for which research is needed are the study of closed systems such as anesthesia-rebreathing systems, and even the small enclosed oxygen cribs in which newborn infants are cared for. Some of the infants with hemolytic disease may excrete fairly large amounts of carbon monoxide and thus produce important levels of carboxyhemoglobin.

For example, if the nuclear submarine *Nautilus* were submerged for 5 days and cigarette smoking or other forms of combustion were prohibited, the endogenous carbon monoxide produced by its crew members would be sufficient to exceed 25 parts per million in the vessel's atmosphere.

Schueneman (U.S. Public Health Service, Cincinnati) felt that the persons whose reactions were critical were those who spend a large portion of their lives in motor vehicles and who are cigarette smokers; exhaust control systems must be designed to protect them. However, it was pointed out that a small fraction of the population also have unusual types of hemoglobin and those individuals might very well be unusually susceptible. Ayres (St. Vincent's Hospital, New York) pointed out that small amounts of carbon monoxide may increase the significance and severity of angina pectoris and other vascular diseases. This has been observed occasionally under controlled conditions. Myocardial oxygen consumption is substantially decreased when significant amounts of carbon monoxide are present, since the myocardium tends to extract a larger fraction of the available oxygen from the circulating blood than do other organs.

Neiberger (Meteorology Department, University of California, Los Angeles) discussed the mechanisms by which carbon monoxide is removed from the atmosphere. While these are not entirely clear, the evidence is suggestive that the substance is oxidized to carbon dioxide by either hydroxy radicals, by other oxygenated substances, or by molecular oxygen in the upper atmosphere. Xintaras (U.S. Public Health Service, Cincinnati) emphasized the need for studying the effect of carbon monoxide on sleep cycles. Many of the participants emphasized the importance of the additional pollutants to which most people exposed to carbon monoxide are also exposed.

Ayres and Goldsmith both called attention to the ability to estimate carbon monoxide exposures in populations through the study of carboxyhemoglobin since the respiratory and circulatory system of the human is a type of integrating sampler. Estimation of carboxyhemoglobin by the measurement of expired carbon monoxide after breathholding equilibration is a very rapid, simple, and valid technique for such studies. The possibility that further research on carbon monoxide effects could well be done in athletes was stressed by Peeples (University of California, Davis). Hammond raised the question as to whether carbon monoxide was an important factor in the genesis of cancer.

The meeting was chaired by O. C. Taylor (acting director, Statewide Air Pollution Research Center, Riverside).

It was concluded that carbon monoxide may be the most underestimated pollutant of this era and the participants agreed to cooperate in further research on this subject.

JOHN R. GOLDSMITH
Environmental Hazards Evaluation Unit, California State Department of Public Health, Berkeley

Calendar of Events—August

National Meetings

27–31. American Soc. for **Pharmacology and Experimental Therapeutics**, fall mtg., Washington, D.C. (Executive Officer, 9650 Wisconsin Ave., Bethesda, Md.)

27–1. American Congr. of **Physical Medicine and Rehabilitation**, 45th annual session, Miami Beach, Fla. (Executive Director, 30 N. Michigan Ave., Chicago, Ill.)

27–1. American Inst. of **Biological Sciences**, 18th annual mtg., College Station, Tex. (AIBS, 3900 Wisconsin Ave., NW, Washington, D.C.)

The following societies will meet in conjunction with the AIBS. Additional information is available from AIBS or from the program chairmen listed below.

American **Bryological** Soc. (Secretary-Treasurer, Box 36, S.W. Missouri State College, Springfield)

American Soc. for **Horticultural Science**. (Executive Director, 615 Elm St., St. Joseph, Mich. 49085)

American Soc. of **Human Genetics**. (c/o Division of Medical Genetics, Dept. of Medicine, Johns Hopkins Hospital, Baltimore, Md.)

American Soc. of **Naturalists**. (Executive Director, 3900 Wisconsin Ave., NW, Washington, D.C. 20016)

American Soc. of **Plant Physiologists**. (Secretary, c/o Dept. of Biology, Yale Univ., New Haven, Conn.)

American Soc. of **Plant Taxonomists**. (Secretary, c/o Botany Dept., Univ. of California, Berkeley)

Botanical Soc. of America. (Secretary, c/o Botany Dept., Indiana Univ., Bloomington)

Ecological Soc. of America. (Secretary, c/o Ecology Section, Health Physics Div., Oak Ridge National Lab., Oak Ridge, Tenn.)

Genetics Soc. of America. (Executive Director, 3900 Wisconsin Ave., NW, Washington, D.C. 20016)

Mycological Soc. of America. (Secretary-Treasurer, c/o Pioneering Res. Div., Natick Labs., Natick, Mass.)

28–30. Gatlinburg Conf. on Special Topics in **Nuclear Education and Research**, Gatlinburg, Tenn. (J. E. Mott, Oak Ridge Associated Universities, Box 117, Oak Ridge, Tenn. 37830)

28–30. Preparation and Properties of **Electronic Materials**, 9th annual conf., New York, N.Y. (L. R. Weisberg, RCA Labs., David Sarnoff Research Center, Princeton, N.J. 08540)

28–30. **Space** Program Issues of the 70's, conf., Seattle, Wash. (AIAA, Meetings Manager, 1290 Sixth Ave., New York 10019)

28–31. **Clay Minerals** Soc., 16th natl. conf., Golden, Colo. (L. G. Schultz, U.S. Geological Survey, Bldg. 25, Federal Center, Denver, Colo. 80225)

28–1. **Electron Microscope** Soc. of America, 25th annual mtg., Chicago, Ill. (Executive Director, c/o School of Chemical Engineering, Olin Hall, Cornell Univ., Ithaca, N.Y. 14850)

28–2. **Alaska Science** Conf., 18th, College. (P. Morrison, Inst. of Arctic Biology, Univ. of Alaska, College 99735)

29–31. Association for **Computing Machinery**, 22nd natl. conf., Washington, D.C. (T. Willette, Box 6, Annandale, Va. 22003)

29–1. **Electron Microscopy** Soc. of America, annual mtg., Chicago, Ill. (A. V. Loud, Pathology Dept., College of Physicians and Surgeons, Columbia Univ., 630 W. 168 St., New York 10032)

31–2. American **Physical Soc.**, Seattle, Wash. (Executive Secretary, 538 W. 120 St., New York 10027)

31–6. American **Psychological** Assoc., annual mtg., Washington, D.C. (APA, 1200 17th St., NW, Washington 20036)

International and Foreign Meetings

27–1. Laurentian **Hormone** Conf., Mont Tremblant, P.Q., Canada. (The Conference, 222 Maple Ave., Shrewsbury, Mass. 01545)

27–2. **Ionization Phenomena in Gases**, 8th intern. conf., Vienna, Austria. (F. Viehbock, Osterreichische Studiengesellschaft fur Atomenergie, Lenaugasse 10, A-1082 Vienna VIII)