riculum, effected there in 1945. Much earlier, however, he had come to the conclusion that, while research was of extreme importance, a major service to be expected of medical schools in general was "to carry the newer things of medicine to the men upon whose minds must rest the burden of caring for the health of the people—the men in general practice." The school had two chief teaching functions, as he saw it: the first to give the facts; the second, to mold character and method of thought. Compensation for failure of the first might come in later life, not so with failure of the second. He wanted more emphasis on English composition, without which much good work is lost in confused reporting. He also was insistent on general culture, which, in his opinion, ought to be expected in physicians. This comes in large part, so he wrote, from contact with the broadly cultured teacher. These and many other searching comments are contained in addresses given at meetings of the Council on Medical Education and Hospitals.

His clinical interests were broad. Psychosomatic medicine, so greatly emphasized in recent years, was no novelty to him. He was writing locally in 1906 on the mental attitude of the physician with patients who had tuberculosis, and he emphasized repeatedly thereafter, both to surgeons and physicians, that their first responsibility was the patient, not disease.

McLester's burning interest in nutrition seems to have begun in the early 1920's with his concern for sufferers from mild neuroses, "neurasthenics," as they then were called. Many of his patients improved greatly under rest and better diets, and he was led to place great emphasis on the contribution of diet. He was among the first to recognize that nutritional failure can be injurious long before a frank deficiency disease develops. "It is a principle of the school system in which I work," he wrote—he was medical director of the schools of Birmingham—"that in childhood even the development of character proceeds more surely in the presence of health and that good nutrition is prerequisite to health." This thinking led him to demand training in nutrition of pupil, teacher, and parent. So nutrition teaching was begun in the Birmingham schools and a school luncheon program started early there.

McLester served for nearly 20 years as chairman of the Council on Foods and Nutrition of the American Medical Association. In World War II he was a member of the Food and Nutrition Board of the National Research Council and chairman of its Subcommittee on Medical Nutrition. Physicians generally have been slow to grasp the importance of good diets for the maintenance of health and in the effective treatment of disease. McLester was untiring in his efforts to correct such apathy. His monograph, *Nutrition and Diet in Health and Disease,* ran through six editions. The first appeared in 1927, the sixth in 1952. He spoke repeatedly on this subject, most effectively perhaps, in his presidential address to the House of Delegates of the American Medical Association. Thus, he most emphatically deserved a special honor, received before he died from the Board of Trustees of that association: the Joseph Goldberger award, bestowed on him for outstanding contributions in the field of clinical nutrition.

RUSSELL M. WILDER
Mayo Clinic, Rochester, Minnesota

News and Notes

Leprosy

The 6th International Congress of Leprosy, sponsored by the Spanish Government with the collaboration of the International Leprosy Association, was held in Madrid, 3–11 Oct. 1953. The *International Journal of Leprosy* [**21** (Oct–Dec. 1953)] carried an editorial entitled "Report on the Madrid Congress," as well as a list of registrants and the minutes of the meetings of the Congress council, of the plenary sessions of the Congress, and of the general meeting of the International Leprosy Association. In addition, there were complete reports of the various technical committees of the Congress and the authors' abstracts of most of the scientific papers presented.

The importance of leprosy in the world today is reflected in the number of international registrants at this Congress and in the titles of the numerous scientific papers presented.

The official registration list comprised 337 names. Compared with previous congresses, this represented a steady growth in registration—at the Cairo Congress in 1938, the registration was 167, and at the Havana Congress in 1948, it was 226. The international atmosphere of the meeting was emphasized by the fact that 226 registrants were from countries other than Spain; 51 countries or important political subdivisions were represented. In addition to the official membership in attendance, there were a number of "adherent" registrants who accompanied regular members. The total attendance at the Congress was estimated to be 500.

Abstracts of 134 of the 166 titles listed in the program were published. About 25 percent of these abstracts were in English; the remainder were in Spanish, Portuguese, Italian, and French.

An interesting archeological-osteological study of skeletons excavated from a medieval churchyard in Denmark was reported. Patients from a leprosy hospital had been buried there between the years 1250 and 1550. From this study came the new observation that the anterior nasal spine of the maxillary bone was atrophic or absent in some cases of leprosy. This

atrophy of the anterior nasal spine has subsequently been observed in roentgenographic studies of patients with leprosy.

Of special interest was a preliminary report by representatives of the Leonard Wood Memorial of the first large-scale, controlled, global (Japan, Philippines, and South Africa) experiment in the treatment of leprosy. Sulfones and several other drugs were used, including dihydrostreptomycin. Treatment by a combination of drugs offered no advantage.

Though human leprosy has not been transmitted to animals, there were no reports at this meeting of any further attempts to reproduce the disease in animals.

No tissue culture experiments were mentioned. There were, however, two papers on attempts to cultivate the organism, concerning which the editor made the following comment:

> Interest was especially centered, because of the publicity that had been given them, on two reports on bacteriology. One dealt with a *Mycobacterium*, isolated from a leprosy lesion but not claimed to be the causative agent of the disease, which certain other workers had used in leprosy patients to induce lepromin positivity and for treatment. The other claimed success in the cultivation of the leprosy bacillus through a stage consisting of a large, motile non-acid fast form.

The reports of the technical committees, which were published verbatim, should be of great value to those interested in any phase of leprosy. Since the membership of these committees was international, and since the reports, as published, were approved by the Congress as a whole, they represent data, concepts and opinions that have been subjected to the processing of an international clearing house of experts in the field of leprosy.

Classification committee. The most significant change made in the classification of leprosy was the recognition of the borderline (dimorphous) group. The official classification adopted by the Congress was as follows: lepromatous type (L), tuberculoid type (T), indeterminate group (I), borderline (dimorphous) group (B).

To aid in planning and evaluating treatment and in prognosis, the types and groups were further subdivided into varieties. The borderline (dimorphous) group was defined in part as

> A malign form very unstable; almost always strongly positive on bacteriological examination; the lepromin reaction generally negative. Such cases may arise from the tuberculoid type as the result of repeated reactions and sometimes they evolve to the lepromatous type.

With the concept that the lepromatous and tuberculoid types include cases that clinically, immunologically, bacteriologically, and histologically would be placed at opposite poles, the borderline (dimorphous) group gives recognition to the fact, well known by experienced leprologists, that some cases of leprosy show characteristics of both types, and that skillful clinical management of such cases depends on proper classification.

Treatment committee. In the report of the 5th Congress, held in 1948, sulfone therapy was recognized as a distinct advance in the management of leprosy. During the following 5 yr much has been learned about the use and effect of the sulfone drugs. The parent sulfone 4,4′-diaminodiphenyl sulfone (DDS), once considered too toxic for use in man, has been found safe and as effective as the more expensive compounds. While the exact mode of action is not clear, the sulfone drugs are apparently not bactericidal, but they may be bacteriostatic. In some centers, after prolonged treatment, clinical and bacteriologic arrest of the disease has been attained in a high proportion of cases, and it has been maintained over a period of years. In other centers, arrest has occurred in only a relatively small proportion of cases, and relapse has not been uncommon. The committee concluded: "Various observations indicate that arrested cases are not completely freed of the leprosy bacilli and that reactivation of the disease is, therefore, not unlikely."

Nearly all workers have abandoned the use of chaulmoogra oil in favor of sulfone treatment. Thiosemicarbazones, isonicotinyl hydrazide, and dihydrostreptomycin have not been as effective as the sulfones. ACTH and cortisone have been of value in treating serious toxic and allergic reactions to drugs. The local use of cortisone for eye complications has been of great value.

Immunology committee. For the first time, a committee report on immunology was presented to an International Congress of Leprosy. The prominence given to this subject was the result of the importance now ascribed to the lepromin reaction and the interest in B.C.G. immunization. The committee reported that

> The use of lepromin reaction as an index of the degree of resistance to *Mycobacterium leprae* is constantly increasing. It offers a useful element in respect to prognosis and classification of cases of leprosy and, consequently, its use in practice is recommended.

The report discussed the various antigens now in use and gave the criterions for reading the reactions. (Since the lepromin antigen has to be prepared from leprous nodules removed from patients, material for preparation of the antigen is difficult to obtain and standardization is unsatisfactory.) The committee further reported that

> A positive lepromin reaction is regarded as an expression of a certain amount of resistance to *Mycobacterium leprae* directly proportionate to the degree of positivity.

With reference to the use of B.C.G. immunization in leprosy, the committee stated:

> In leprosy patients a positive lepromin reaction not artificially produced gives, from the biological point of view, a favorable prognosis.
>
> The administration of B.C.G. to healthy individuals who are negative to lepromin causes a change of the reaction in a large proportion of cases.
>
> The question of whether or not a positive lepromin reaction, artificially induced by B.C.G., indicates immunity is being studied and, as yet, no conclusive statement can be made regarding the matter.

Epidemiology and control committee. The committee emphasized the need to continue determining the prevalence of the disease in those countries in which leprosy was endemic. There was a recommendation that the lepromin-negative contact be examined more frequently than the lepromin-positive contact; a similar recommendation had been made at the Havana Congress.

Among other methods for the protection and control of contacts, the committee recommended "Induction of lepromin reactivity by means of B.C.G." However, the general council proposed that this should be struck out, because B.C.G. is still in the experimental stage and there is no adequate evidence to justify the indicated view that it is an established method of prophylaxis. The final plenary session, nevertheless, voted for the retention of the statement. The committee reaffirmed

> . . . that leprosy belongs to the group of infectious and contagious diseases and that, consequently, definite methods of control should be employed when dealing with it.

Social aspects committee. The committee approved the action of the Havana Congress, which condemned the use of the word "leper," but retained the term "leprosy" as the scientific name of the disease. It was recommended "that there be as little interference as possible with the normal lives and usual occupations of leprosy patients certified by leprologists as noncontagious. . . ."

On raising the question of whether this big international meeting was worth while, the editor made the following comment:

> After all there is always the question of which is more important, the scientific programs or the personal contacts, and many hold for the latter. As recently stated, [Council of American Physical Society, Nov. 1952, cited in *Science* **118**, 311 (1953)], "The personal exchange of ideas and the collaboration of foreign scientists are essential sources of information and ideas which cannot be replaced by written correspondence or the study of foreign publications. . . ."

CHAPMAN H. BINFORD
Armed Forces Institute of Pathology, Washington 25, D.C.

Science News

Vitamin deficiency is now known to be among the causes of at least 11 nervous or **mental disorders,** according to a report by Robert A. Peterman and Robert S. Goodhart in the *Journal of Clinical Nutrition.* Such striking symptoms as mental deterioration, hysteria, hallucinations, and even ideas of persecution, are listed as sometimes originating from a lack of certain vitamins, mainly the B vitamins, in the diet. Sometimes doses of 5 to 10 times more than the normal nutritional requirement of the missing vitamins are needed to help these patients. The report, written to make these findings available to practicing physicians, summarizes 74 separate studies.

Cortisone and hydrocortisone, hormones related to the adrenal cortex, produce significant **elevations of blood fats,** including cholesterol, when injected into the rabbit, according to David Adlersberg, Louis E. Schaefer, and Chun-I Wang in a paper scheduled for a forthcoming issue of *Science.* It is well known that cholesterol feeding in the rabbit results in extreme elevation of blood fats, especially cholesterol, and produces marked deposition of cholesterol in the arteries (atherosclerosis). The combination of cholesterol feeding with daily injections of the hormones results in even higher levels of blood fat than with cholesterol feeding alone, but also results in decided retardation of deposition of cholesterol in the arteries and other tissues. This effect is probably caused by diminished tissue permeability.

The **New Jersey Resettlement Project,** first statewide program in the nation concerned with the social and economic adjustment of displaced persons, is being continued this summer on a private interim basis. It was conducted jointly by the N.J. Welfare Council and Rutgers University with a $10,000 grant from the East European Fund of the Ford Foundation until 30 June. Staff members will continue to work with recent immigrants on a voluntary basis until such time as the project acquires new sources of support.

In 1953, when gamma globulin (GG) was first made available for use against polio (after the 1951–52 field trials conducted by William McD. Hammon of the University of Pittsburgh), there was a widespread belief that GG was "the complete answer to polio." Neither Dr. Hammon nor the National Foundation for Infantile Paralysis believed this to be true. Now the impression is growing that it is not effective at all. To correct **public misconceptions about the use of GG,** the foundation lists the following facts.

1) Gamma globulin gives limited and temporary protection against paralytic polio when injected under the proper conditions in the right amount and if timed properly. This year GG, because of new Office of Defense Mobilization regulations and the larger supply, can be given earlier and has a better chance to be effective.

2) About twice as much GG for polio, 2 million doses, is available this year. Distribution is based on local polio attack rates as compared with the country as a whole. Adequate supplies (2 million doses) are set aside for use against measles and infectious hepatitis.

3) From the end of the first week through the fifth week after injection, protection against paralytic polio was found to be 88 percent. There is strong evidence that significant protection also was provided from the fifth through the eighth week after injection.

4) Between 26 Apr. and 13 July extensive field trials were conducted on a potential vaccine developed by Jonas E. Salk, University of Pittsburgh; the trial vaccine, to be studied and evaluated during the remainder of the year, may provide long-lasting protection against paralytic polio. GG has never been given credit for more than temporary and limited protection.

5) GG is at present the only immunizing agent that has been proved effective against paralytic polio. It will be used this summer to prevent paralysis, but the results will be difficult to measure, since no one will be able to prove that any specific child would have had paralysis without GG.

The National Bureau of Standards is moving its **radio propagation division** from Washington, D.C., to Boulder, Colo. The new site offers better "laboratory" conditions in the form of mountains and wide, windswept plains. About 217 acres of land were donated to the NBS by Boulder citizens and civic groups. A new $4 million building for research in radio wave propagation and radio standards was completed in May. Frederick W. Brown will head the new facilities. The Bureau already has a cyrogenics laboratory at Boulder.

Fresh evidence that ancient Mexicans lived near Mexico City some 11,000 yr ago and hunted elephants now long extinct has been unearthed at the "reservoir of elephants" about 22 mi northeast of the city. The fossilized bones of the **second mammoth** and stone weapons that probably felled the beast were discovered in the dry lake, Texcoco, by Louis Aveleyra, director of prehistoric archeology at the Mexican National Museum, and Manuel Maldonado, paleontologist.

At the same site the first mammoth was found in 1952, together with obsidian weapons, and nearby, Mexico's ancient man, 11,000-yr-old Tepexpan Man, was found in 1947. Some of the fossil bones showed signs of having been worked on with stone tools. The weapons found with the discovery were three projectile points known as "atlatls." Somewhat larger than arrow heads, these points apparently were released from a shaft and shot into the animal's ribs.

Pickett & Eckel, Inc., Alhambra, Calif., has announced a new **conversion slide rule** bearing 64 linear, liquid, energy, and miscellaneous factors on one side, and a complete trigonometric scale arrangement on the reverse side consisting of A, K, DF-CF, T, S, CI, C-D, and L scales. By merely "positioning" a conversion mark opposite an index mark, any conversion is automatically set and read on the C, D, CF, or DF scales without moving the slider or further computation. The same automatic conversion principle is adaptable to any set of specialized conversion factors on either pocket-size or 10-in. rules for any type of work.

The National Academy of Sciences–National Research Council has announced **new memberships in the Building Research Institute,** a branch of the Division of Engineering and Industrial Research. They are Aluminum Co. of America, Pittsburgh; Baldwin Hill Co., Trenton; E. K. Geyser Co., Pittsburgh; Independent Nail and Packing Co., Bridgewater, Mass.; Industrial Sound Control, Inc., Hartford, Conn.; Inland Home Corp., Piqua, Ohio; Minneapolis-Honeywell Regulator Co., Minneapolis; Unistrut Corp., Wayne, Mich.; Virginia Metal Products, Inc., Orange, Va.; A. M. Byers Co., Pittsburgh. New associate members are Douglas E. Parsons, chief of the building technology division, National Bureau of Standards; and E. George Stern, research professor and head of the department of wood construction, Virginia Polytechnic Institute.

The Building Research Institute is a technical organization for research-minded men from the professions and businesses of the building industry. It holds conferences and sponsors, but does not perform, research. It publishes the proceedings of its conferences, a newsletter, and reviews and abstracts of publications about building research.

A method for choosing a **solvent system to use for countercurrent distribution** is described by C. A. Hollingsworth, J. J. Taber, and B. F. Daubert in a paper soon to appear in *Science*. The separation of two solutes by countercurrent distribution depends upon the fact that the two solutes are distributed differently between two immiscible solvents. Workers often add a third solvent to the immiscible pair of solvents in order to obtain partition coefficients that will yield satisfactory separations. Hollingsworth *et al.* have developed a systematic method for arriving at the proper composition of the three-solvent system. The application of their method requires simply the determination of the critical point of the three-solvent system and partition coefficient values at one or two compositions not too far from the critical point.

George Bartholomew and William Dawson of the University of California at Los Angeles report that the **mourning dove** can go four or five days without water or succulent food in moderate temperatures and suffer no ill effects. It is able to drink in 10 min an amount of water equivalent to over 17 percent of its body weight.

Enough toxins to cause **food poisoning** may develop at a temperature of 100°F in 4 to 5 hr, warns Oliver W. Kaufmann, department of food technology, University of Illinois. One bacterium kept at body temperature for 24 hr can multiply 5×10^9 times. By contrast, a bacterium kept at 50°F multiplies only 500 times.

A **nova** was discovered in the constellation Ophiuchus on 21 July by Victor Blanco of the Warner-Swasey Observatory, Cleveland. Visible low on the southern horizon in the early evening hours, its magnitude is now about 9; hence it can be seen with a small telescope. Its location is 17 hr, 20.8 min in right ascension, minus 27 deg, 39 sec in declination.

A **tooth drill that also has industrial possibilities** has been invented by R. J. Nelson, C. E. Pelander, and J. W. Kumpula at the National Bureau of Standards. It has a tiny turbine, driven by water, that spins at a rate of 61,000 rev/min. Its diamond-disk grinding point

stops instantly when a finger is abruptly placed against its edge, if the dentist presses too hard while grinding a tooth, or if the tool should happen to catch or bind in a manner that would be hazardous. It does not climb or roll out of the cavity.

Water is pumped to the driving turbine through a flexible tube and, after passing through the turbine, returns to the pump in another tube that jackets the inflow tube. The dentist can stop the drill for a moment by stepping on a special tube filled with fluid; the fluid trips a pressure-sensitive switch which shunts the water around the turbine. The tool could be of industrial use where small bits of hard materials must be ground away, as in tool and die making.

The secret wartime **development of DDT** as an insecticide to protect our armed forces is the subject of a sprightly written story by Robert Rice in the *New Yorker* magazine for 17 July. The story also describes the lasting qualities of DDT, which have convinced "a number of jittery souls that mankind has finally and inexorably embarked on a course of suicide by slow poison."

The American Hospital Supply Corp., Evanston, Ill., has announced a fast, **new blood typing procedure.** A Haematype Card is coated with Dade serums which make it possible to determine blood grouping and Rh typing right on the card itself. No preparation or complicated procedures are involved. In tests conducted in hospital laboratories and blood banks throughout the country, the cards have consistently proved 100-percent accurate in blood-grouping determinations and as high as 98-percent accurate in Rh typing.

Scientists in the News

A recent appointment to head the microbiology program and become assistant professor of botany at Dartmouth College is **Raymond W. Barratt.** Previously he was at Stanford University. **Wilbur T. Ebersold,** Public Health Service research fellow of the National Cancer Institute, also has joined the Dartmouth staff.

Lyle Borst, who has been on the faculty of the University of Utah since 1951, has been made chairman of the department of physics at New York University's College of Engineering. He succeeds **Yardley Beers** who has been serving as acting chairman and will continue on the faculty.

Richard A. Carrigan, supervisor of analytical chemistry at Armour Research Foundation of the Illinois Institute of Technology, left in July for Burma to work on a project to reorganize and expand the State Industrial Research Institute in Rangoon. Purpose of the project is to strengthen Burma's research and development activity by improving the facilities of the institute. Dr. Carrigan will aid **Christopher Barthel, Jr.,** resident director of the Rangoon institute, in setting up laboratories in spectroscopy and analytical chemistry and in training personnel.

Hans Ludwig Hamburger of the University of Cologne will be a visiting professor in the Cornell mathematics department during the coming academic year. Professor Hamburger, whose fields are mathematical analysis, differential geometry, and the theory of linear transformations, will conduct the undergraduate honors seminar in mathematics and also an advanced seminar in analysis. He taught at the University of Cologne from 1924 to 1935, and returned there a year ago. From 1941 to 1947 he was on the faculty of the University College of Southampton and from 1947 to 1953 at the University of Ankara, Turkey.

James G. Horsfall, director of the Connecticut Agricultural Experiment Station, will give the main address at the station's annual field day 18 Aug. at Mt. Carmel. In keeping with this year's field-day theme, which emphasizes research on plant diseases, his topic is "The rots and the rusts, the blasts and the blights that beset us."

Charles E. Kellogg, assistant administrator for soil survey, Soil Conservation Service, U.S. Department of Agriculture, will attend the Fifth International Congress of Soil Science, to be held in Leopoldville, Belgian Congo, 16 to 23 Aug., where he will deliver one of the six major addresses. Enroute, he will spend a short time in study of the soil investigations on the Gold Coast, at the request of the British Government. He also plans to visit soil research institutions in several European countries on his way home.

A. Packchanian, professor of bacteriology and parasitology and director of the Laboratory of Microbiology at the University of Texas School of Medicine, Galveston, has gone to Africa to study the chemotherapy of African sleeping sickness, for which he has discovered three new and specific drugs. The bulk of his investigation will be conducted in the Belgian Congo, Nigeria, and Uganda. On his return trip, in late September, he will stop briefly in Egypt to study amebiasis, in Arabia to collect data on yaws, and in Iran and Lebanon to make a brief survey of leishmaniasis.

Alex Reed, associate professor of agriculture at Southern Illinois University, Carbondale, has accepted an invitation to serve for 2 yr as associate professor in dairy science at the Allahabad Agricultural Institute in India.

On 14 July the College of Physicians of Philadelphia awarded the Alvarenga prize for 1954 to **DeWitt Stetten, Jr.,** associate director in charge of research, National Institute of Arthritis and Metabolic Diseases, National Institutes of Health, Bethesda, Md. The prize was established by the will of Pedro Francisco Da Costa Alvarenga of Lisbon to be awarded annually on the anniversary of the death of the testator.

John C. Ullery has been named professor and chairman of the department of obstetrics and gynecology in Ohio State University's College of Medicine, effective 1 Oct. Dr. Ullery, who has been assistant professor of obstetrics and gynecology at Jefferson Medical School since 1950, will succeed **Allan C. Barnes,** who resigned in 1953. Acting chairman since that time has been **Z. J. R. Hollenbeck** of the department.

J. M. Dalla Valle, professor of chemical engineering at Georgia Institute of Technology, and **B. C. Moore,** department of mathematics at A. & M. College of Texas, have joined the technical service division of Humble Oil & Refining Co.'s Baytown, Texas, refinery for the summer. Dr. Dalla Valle was a Fulbright lecturer at the universities of Milan and Nottingham last year.

The Office of International Relations, National Academy of Sciences–National Research Council, has provided the following information concerning the travel plans of scientific **visitors to the United States and Canada.**

Henry Barcroft, Sherrington School of Physiology, St. Thomas's Hospital, London. Here from late November to mid-December to attend the Fourth Conference on Shock and Circulatory Homeostasis at Princeton, N.J.

R. P. Bell, fellow of Balliol College, Oxford, and demonstrator in chemistry in the University of Oxford. Here 7 Sept. to 27 Oct. to attend a conference on reaction mechanism and an American Chemical Society symposium, and to visit Northwestern University.

A. C. Hulme, Ditton Laboratory, Department of Scientific and Industrial Research, East Malling, Kent. Beginning in the fall, will be here 1 yr to carry out research on the metabolism of amino acids and proteins in fruit at Cornell University.

W. J. Robinson, head of Fluid Mechanics Division of Mechanical Engineering Research Laboratory, DSIR, London. Here from 31 Aug. to about 25 Sept. to attend the International Electrotechnical Commission committee meeting on hydraulic turbines in Philadelphia. Various other visits in U.S. and Canada.

Niko Tinbergen, department of zoology and comparative anatomy, University Museum, Oxford University. Here 22 Sept. to 10 Oct. to attend the First Conference on Group Processes in Ithaca, New York.

N. Booth, general manager, research and development department, The British Oxygen Co. Ltd., London, coming in the fall to discuss low temperature research, use of oxygen in metallurgical processes, and acetylene chemicals.

R. S. Dadson, physics division, National Physical Laboratory, DSIR, London. Here 2 Sept. to about 15 Oct. as a delegate to the International Electrotechnical Commission. Various other visits.

A. Fitton, P.S.O., Fuel Research Station, DSIR, London. Here in August and in the fall to attend a conference on "Vehicle combustion products and other emissions" at Pasadena, Calif.

J. A. Hall, physics division, National Physical Laboratory, DSIR, London. Here 15 Oct. to 6 Nov. to attend the "Third symposium on temperature" in Washington, D.C.

Sarangapani Parthasarathy, New Delhi, India., head of the division of sound, National Physical Laboratory, New Delhi. Will come sometime in 1954 for 90 days. Schedule to be arranged by the American Council on Education.

Meetings

A program of 23 papers has been arranged for the symposium, **"Problems relating to the physical adsorption of gases and solids,"** to be sponsored by the physical chemistry division of the Chemical Institute of Canada at the Royal Military College, Kingston, Ont., 10–11 Sept. Eric Rideal of King's College, London, will be a guest. Speakers from industrial, university, and government research organizations in the United States and Canada will attend. For details write W. G. Schneider, Division of Pure Chemistry, National Research Council, Ottawa, Ont.

The Institute of Radio Engineers' **Professional Group on Industrial Electronics** and the Pittsburgh Section of IRE are cosponsoring a symposium to be held in the Mellon Institute, Pittsburgh, 29–30 Sept. It is designed to be of interest to those in industry who are finding that electronics is playing an increasing role in their field. The four sections deal with gauging and process control, applications of light, high-power electronics, and automation and control. For registration information write to J. B. Woodford, Jr., Carnegie Institute of Technology, Pittsburgh 13.

The fall assembly meeting of the **Radio Technical Commission for Aeronautics** will be held at the Willard Hotel in Washington, D.C., 30 Sept. to 1 Oct. The first day of the meeting will be devoted to a review of RTCA activities. On the second day a study will be made of the current status of the "Common system" of air navigation, communication, and traffic control. The functions and work of various Government agencies in the development and implementation of the system will be explored in detail.

The International Committee on Monuments, set up by UNESCO in 1950 to advise on the conservation, protection, and restoration of monuments, artistic and historical sites, and archeological excavations, has prepared recommendations with regard to international **regulations for archeological excavations.** The object of such measures is to secure every possible access by archeologists of all countries to archeological sites and insure international cooperation in this field. These recommendations will be submitted for approval to the General Conference of UNESCO in Montevideo, Uruguay, 12 Nov.–11 Dec.

Six symposiums of technical papers and two discussion programs have been scheduled for the 14–15 Oct.

meeting in Dallas of **South Central Region, National Association of Corrosion Engineers.** Papers will be presented on cathodic protection, protective coatings, inhibitors, processing plant corrosion problems, pipeline corrosion, and oil and gas production. R. C. Buchan, Humble Oil and Refining Co., Houston, is technical program chairman and Sam Hodgdon, Metal Goods Corp., Dallas, is general chairman.

An international meeting on **Technique of Ships and Navigation** will take place from 26 Sept. to 1 Oct. in Naples. The five sections will deal with "Naval architecture," "Ship construction," "Internal combustion engines and steam propelling apparatus," "Electric plants and equipment," and "Sea and air navigation." Applications may be obtained from Segreteria Mostra d'Oltremare, Naples, Campi Flegrei, *before Aug. 15.*

Education

Physicians, nurses, and medical students participated in the 4th **course in tropical public health** held in Mexico under the supervision of Harold Mozar, Director of the School of Tropical and Preventive Medicine of the College of Medical Evangelists. The purpose of this 3-wk course is to give insight into living conditions and medical practice in the tropics and an understanding of socio-economic implications of health and disease in an underdeveloped area. In addition to supervised visits to hospitals, clinics, and villages for clinical demonstrations, environmental sanitation was studied under actual field conditions.

More than $1 million in contributions by American physicians during 1953 have been turned over to the National Fund for Medical Education to ease the **financial plight of the nation's medical schools.** E. L. Turner, Chicago, secretary-treasurer of the American Medical Education Foundation, said "the contributions sent in by doctors throughout the nation is an example of outstanding service in aiding humanity through medicine."

Lewis F. Hatch of the University of Texas is directing an **industrial short course on petrochemicals** 2 to 14 Aug. in Bartlesville, Okla. Dr. Hatch will present latest information on basic chemical reactions involved when petroleum raw materials are used in the manufacture of chemical products. Phillips Petroleum Co. is sponsoring the short course.

The first of four 5-day courses to be given by the Army Medical Service during the present fiscal year on **"The medical care of atomic casualties"** will begin 24 Aug. at the Army Medical Service Graduate School, Walter Reed Army Medical Center, Washington, D.C. The other three courses will be given 25–30 Oct., 10–15 Jan., and 7–12 Mar.

The courses are open to active duty professional officers of the component corps of the Army Medical Service and to medical service professional personnel of the Air Force, Navy, Public Health Service, Veterans Administration, and Civil Defense. Army Medical Service personnel should apply to the Office of the Surgeon General, Attention: Personnel Division, Career Management Branch. All others should direct their applications through their proper command or administrative channels.

A chair in mechanical engineering has been established at **Stevens Institute of Technology** in the name of **George Meade Bond,** whose development of accurate standards of measurement has been credited with making modern mass production methods possible. The chair is endowed under a bequest of more than $300,000 from the late Mrs. Ella Kittredge Gilson of Hartford, Conn.

A series of 80 new **workshop designs of laboratory apparatus for schools** was published in July by UNESCO. They are precise engineering drawings for use in the manufacture of the essential apparatus and instruments for the teaching of physics, chemistry, and biology in schools and universities. They also will be useful in the shops of the many small-production industries that are now being set up in under-developed countries. The drawings contain no words, but each is accompanied by a separate sheet bearing exact specifications for the purchase of materials, and detailed instructions. Suggestions for its use are given in English and French with space for translation into any language. They are available through UNESCO publication distributors in the member states.

Grants, Fellowships, and Awards

Applications for awards available 1 July 1955 will be received by the **Life Insurance Medical Research Fund** as follows: (i) Postdoctoral research fellowships, *until 29 Oct., 1954*; preference is given to those who wish to work on cardiovascular function and disease or related fundamental problems; minimum stipend $3500, with allowances for dependents and necessary travel. (ii) Grants to institutions in aid of research on cardiovascular problems, *until 15 Nov. 1954*; support is available for physiological, biochemical, and other basic work broadly related to cardiovascular problems as well as for clinical research in this field. Application forms may be obtained from the Scientific Director, Life Insurance Medical Research Fund, 345 East 46 St., New York 17.

A Presidential Citation was awarded in July to the University of California's **Los Alamos Scientific Laboratory** for its outstanding achievements in the research and development of the nation's nuclear and thermonuclear weapons. The citation was presented for President Eisenhower by Lewis L. Strauss, chairman of the Atomic Energy Commission, to Norris E. Bradbury, director of the laboratory, and members of its technical board.

The **National Jewish Hospital** at Denver has announced the creation of two research fellowships: the Walter P. Harris fellowship in clinical research and the A. T. Hirsh fellowship in cardio-pulmonary physiology. The former, for studies in the field of tuberculosis and chest diseases, will have a tenure of 2–3 yr and provides a yearly stipend not to exceed $7500. The latter is a $6000, 1-yr fellowship. Address applications to Gardner Middlebrook, Director of Research and Laboratories, National Jewish Hospital, Denver.

The **National Science Foundation** has announced 176 grants totaling about $1,120,000 for the support of basic research in the natural sciences, studies and conferences on science, scientific information exchange, scientific manpower, education in the sciences, and travel of American scientists to international scientific meetings. This is the fourth and final group of awards to be made during fiscal year 1954 by the Foundation for the support of basic research and related matters.

University of Chicago. G. van Biesbroeck, Yerkes Observatory. Astrometric observations, 1 yr, $4400.

University of Illinois. G. C. McVittie, astronomy. Classical and relativistic gas dynamics by the method of Einstein's equations, 2 yr, $11,400.

Indiana University. F. K. Edmondson, astronomy. Observations of asteroids, 1 yr, $5000.

Ohio State University. A. Slettebak, physics and astronomy. Line broadening in early-type supergiant stars, 1 yr, $2700.

University of Virginia. A. N. Vyssotsky, astronomy. Spectra of faint stars, 1 yr, $3500.

University of California. T. L. Allen, chemistry. Dissociation equilibriums of metallic halides at high temperatrues, 3 yr, $9000.

University of Southern California. W. K. Wilmarth, chemistry. Aromatic free radicals, 2 yr, $6300.

Monmouth College. G. W. Thiessen, chemistry. Benzenoid inhibition of the Kolbe electrolysis, 1 yr, $5000.

Mount Holyoke College. L. W. Pickett, chemistry. Vacuum ultraviolet spectra of selected organic compounds, 2 yr, $11,000.

University of Mississippi. W. L. Nobles, School of Pharmacy. Studies involving the Mannich reaction, 2 yr, $4100.

Reed College. A. F. Scott, chemistry. Chemical determination of atomic weights, 2 yr, $8000.

Tufts College. C. E. Messer, chemistry. Solid solution formation and solid-liquid phase equilibriums in systems of aromatic ring compounds, 1 yr, $5000.

University of Washington. W. M. Schubert, chemistry. Aromatic electrophilic substitution by hydrogen, 3 yr, $6500.

Atlanta University. M. L. Reddick, biology. Pattern of outgrowth of cells from chick medulla grown *in vitro,* 2 yr, $4600.

University of Colorado. H. Herrmann, pediatrics, School of Medicine. Embryonic development and maturation of muscle tissue, 1 yr, $7500.

Grinnell College. G. Mendoza, biology. Yolk nucleus of the teleost ova, 1 yr, $500.

Rice Institute. R. V. Talmadge, biology. Hormonal basis for implantation of blastocyst in armadillo, 2 yr, $13,000.

St. Ambrose College. W. F. Lynch, biology. Factors inducing metamorphosis in *Bugula,* 1 yr, $450.

University of Washington. W. S. Hsu, zoology. Bdelloid cytology, 2 yr, $3200.

University of Alaska. C. T. Elvey, Geophysical Institute. Ionospheric research using both radio waves of extra terrestrial origin and from controlled transmitters, 2 yr, $20,000.

University of California. C. A. Nelson, geology. Cambrian strata of the Inyo Mountains, Calif., 3 yr, $8600.

Paleontological Research Institution. J. D. McLean, Jr. Foraminifera of the Yorktown formation, 1 yr, $5200.

Pennsylvania State University. M. L. Keith, earth sciences. Fractionation of stable isotopes in geologic processes, 2 yr, $15,100.

Pennsylvania State University. O. F. Tuttle, earth sciences. Stability relations of silicate-carbonates at elevated temperatures and pressures, 1 yr, $5500.

Wayne University. W. H. Parsons, geology. Problems of igneous geology in the Beartooth Mountain area, Wyoming-Montana, 1 yr, $3700.

University of Arizona. T. L. Martin, Jr., and C. R. Hausenbauer, electrical engineering. Thermionic ion generation in contaminated air and other gases, 2 yr, $10,000.

University of Delaware. A. B. Metzner, chemical engineering. Engineering reaction kinetics of ethylene oxide hydration, 18 mo, $9000.

University of Detroit. R. H. McCormack, chemical engineering. Solubility of hydrogen chloride and ammonia in water and organic solvents, 18 mo, $2300.

Mississippi State College. D. M. McCain, civil engineering. Stress-strain relations in plain concrete under simulated beam action, 1 yr, $5500.

Oregon State College. J. G. Knudsen, chemical engineering. Heat transfer coefficients in baffled tubular heat exchanges, 2 yr, $7200.

University of Pennsylvania. F. F. Hagerty, chemical engineering. Fixed bed problem with a nonlinear equilibrium relationship, 1 yr, $5000.

Rensselaer Polytechnic Institute. J. O. Hougen, chemical engineering. Reduction of metallic oxides with hydrogen, 1 yr, $4300.

University of Wisconsin. J. A. Duffie, Engineering Experiment Station. Solar energy research, 3 yr, $13,000.

Emory University. F. H. Bormann, biology. Ecology of southern pine, 2 yr, $4200.

University of Miami. H. B. Moore, Marine Laboratory. Reactions of the copepods of the Florida current, 2 yr, $11,600.

Stanford University. D. P. Abbott and R. L. Bolin, Hopkins Marine Station. Populations of marine organisms, 1 yr, $7100.

University of Detroit. P. F. Forsthoefel, zoology. Developmental genetics of luxoid, a new skeletal variation in the house mouse, 2 yr, $7900.

Radford College. V. L. House, biology. Genetic control of venation in *Drosophila,* 2 yr, $7500.

Smith College. A. F. Blakeslee, Genetics Experiment Station. Evolution and life processes in plants, 2 yr, $14,000.

Alabama Polytechnic Institute. H. Wang. Subgroups of complex lie groups and groups of holomorphic homeomorphisms, 1 yr, $8900.

Columbia University. E. R. Lorch, mathematics. Volume in Hilbert space, 1 yr, $5700.

Institute for Advanced Study. S. Chern, mathematics. Pseudo groups with emphasis on complex and sympletic manifolds, 1 yr, $3450.

University of Michigan. W. Kaplan, mathematics. Problems in the theory of functions of a complex variable, 6 mo, $1600.

Ohio State University. M. Hall, Jr., mathematics. Combinatorial problems, 18 mo, $10,400.

Pennsylvania State University. H. B. Curry, mathematics. Combinatory logic, 1 yr, $9400.

University of California. G. Mackinney, food technology. Carotenoid biosynthesis, 2 yr, $16,000.

Johns Hopkins University. W. L. Hughes, McCollum Pratt Institute. Nature of the heme-globin linkage, 3 yr, $18,000.

University of Michigan. A. G. Norman, botany. Interrelationships between plant cell wall polysaccharides, 2 yr, $16,000.

University of Nebraska. J. N. Pazur, Agricultural Experiment Station. Enzymatic synthesis of glucosyl carbohydrates, 2 yr, $10,500.

Woods Hole Oceanographic Institution. F. A. Richards. Significance of chlorophyll C, 2 yr, $8000.

Bowdoin College. M. A. Jeppesen, physics. Optical studies of surface and body properties of crystalline and amorphous solids, 2 yr, $14,100.

Rensselaer Polytechnic Institute. P. J. Bray, physics. Molecular and crystalline structure by a nuclear resonance absorption technique, 2 yr, $17,200.

University of Virginia. J. W. Beams, physics. Ultracentrifuge research on molecular weights, 2 yr, $9800.

Wisconsin Alumni Research Foundation. R. Rollefson, physics. High-energy accelerators, 3 mo, $31,500.

Boston University. J. M. Harrison, psychology. Relation between the hippocampus and sensory hyperasthesia, 2 yr, $9400.

University of Southern California. W. W. Grings, psychology. Stimulus patterning in learning, 3 yr, $9400.

Florida State University. W. N. Kellogg, Oceanographic Institute. Echolocation in the dolphin, 1 yr, $7000.

George Washington University. B. H. Fox, psychology. Vision, 1 yr, $5900.

Johns Hopkins University. E. F. MacNichol, Jr., biophysics. Visual research, 3 yr, $9800.

Northwestern University. A. L. Diamond, psychology. Psy-

cho-physiology of vision: simultaneous brightness contrast, 2 yr, $9000.

University of Utah. P. B. Porter, psychology. Psychological effects of antimetabolites, 2 yr, $10,000.

Rutgers University. D. S. Lehrman, psychology. Physiological basis of incubation behavior in the ring dove, 2 yr, $9500.

University of Wisconsin. W. J. Brogden, psychology. Verbal factors in the learning of motor skill, 3 yr, $15,100.

University of Wisconsin. K. U. Smith, psychology. Role of perception in patterned motion, 2 yr, $7800.

Yale University. F. A. Logan, psychology. Conditions of reinforcement, 1 yr, $5200.

Yale University. K. C. Montgomery, psychology. Exploratory and fear behavior in lower animals, 2 yr, $11,400.

Columbia University. A. Gorbman, zoology. Comparative physiology of thyroidal function, 2 yr, $1,3300.

Emory University. F. W. Fales, biochemistry. Alkali-insoluble reserve carbohydrate of yeast cells, 2 yr, $9100.

Indiana University. W. J. van Wagtendonk, zoology. Role of steroids in the metabolism of *Paramecium aurelia,* 2 yr, $14,000.

Jefferson Medical College. B. W. Koft, bacteriology. Growth factor to replace P-aminobenzoic and folic acids, 2 yr, $5100.

Kaiser Foundation. E. C. Dougherty, internal medicine. Nutrition of free-living nematodes, 2 yr, $13,400.

Massachusetts General Hospital. A. Leaf, medicine. Mode of action of the antidiuretic hormone, 1 yr, $1000.

Princeton University. W. P. Jacobs, biology. Internal factors limiting differentiation of plant cells, 3 yr, $15,400.

St. John's University. D. M. Lilly, biology. Nutritional factors in growth of carnivorous protozoa, 2 yr, $7600.

University of Tennessee. D. F. Holtman, bacteriology. Role of amino acids in the host-parasite relationship, 2 yr, $8300.

Wabash College, W. H. Johnson, biology. Nutritive requirements of *Paramecium multimicronucleatum,* 2 yr, $3000.

Yale University. G. E. Pickford, Bingham Oceanographic Laboratory. Pituitary hormones of fish, 3 yr, $14,400.

F. Harper, Mt. Holly, N.J. Flora and fauna of the central Labrador peninsula, 2 yr, $10,300.

University of Florida. J. C. Dickinson, Jr., biology. Biological survey of Flint–Chattahoochee–Appalachicola drainage basins, 3 yr, $5200.

University of Idaho. H. A. Imshaug, biological sciences. Alpine lichens of western America, 2 yr, $3500.

University of Minnesota. J. W. Hall, botany. Coal ball floras, 2 yr, $2600.

College of New Rochelle. M. D. Rogick, biology. Bryozoa of the Antarctic, 2 yr, $3900.

State University of New York. J. L. Lowe, College of Forestry. Polyporaceae of North America, 1 yr, $1200.

Roosevelt College. C. H. Seevers, biology. Systematics and evolution of Staphylinidae, 3 yr, $8400.

Tulane University. G. H. Penn, zoology. Speciation in crawfish, 2 yr, $5200.

State College of Washington. G. W. Fischer, plant pathology. Revision of the genus *Tilletia,* 2 yr, $6500.

University of Wisconsin. E. V. Morse, veterinary science, and E. McCoy, bacteriology. Speciation of animal pathogens of the genus *Vibrio,* 2 yr, $9550.

Yale University. S. D. Ripley, Peabody Museum of Natural History. Speciation in bird fauna of the eastern Moluccan Islands, 1 yr, $1700.

University of Chicago. R. J. Braidwood, anthropology. Human population studies in the fertile crescent, 3 yr, $23,500.

Harvard University. P. Doty, chemistry. Physicochemical properties and characterization of polymer molecules, 3 yr, $16,000.

University of Illinois. L. M. Black, botany. Isolation and characterization of plant viruses, 3 yr, $5500.

Washington University. Summer research by medical students, 3 yr, $6900.

Attendance at international meetings

Eleventh General Assembly of International Scientific Radio Union and International Congress of Mathematicians. W. Magnus, Institute of Mathematical Sciences, New York, N.Y., $500.

Eleventh General Assembly of International Scientific Radio Union. M. G. Morgan, Thayer School of Engineering, Dartmouth College, $200.

International Congress of Mathematicians. G. S. S. Ludford, mathematics and Institute for Fluid Dynamics, University of Maryland; E. Hewitt, mathematics, University of Washington, $1000.

International Congress for Philosophy of Science. H. Feigl, Minnesota Center for Philosophy of Science, University of Minnesota; H. Margenau, physics, Yale University, $1200.

International Symposium on Infrared. S. S. Ballard, Santa Monica, Calif., $700.

Eighth General Assembly of International Union of Pure and Applied Physics. K. K. Darrow, Bell Telephone Laboratories, $600.

Tenth General Assembly of International Union of Geodesy and Geophysics. J. Bjerknes, meteorology, University of California; H. F. Blaney, Soil Conservation Service, USDA; R. R. Heinrich, geophysics and geophysical engineering, St. Louis University; W. D. Lambert, Canaan, Conn.; M. O. Schmidt, civil engineering, University of Illinois; W. E. Smith, American Geophysical Union of the National Research Council; H. G. Wilm, College of Forestry, State University of New York, $5100.

Third International Gerontological Congress. J. E. Birren, National Institutes of Health; A. J. Carlson, physiology, University of Chicago; O. J. Kaplan, psychology, San Diego State College; A. H. Norris, Baltimore City Hospital, $1940.

Eighth International Congress of Botany, International Union of Biological Sciences. E. Ball, botany, North Carolina State College; R. M. Blouch, botany and plant physiology, Colorado A. and M. College; J. E. Canright, botany, Indiana University; E. C. Cantino, botany, University of Pennsylvania; L. C. Cochran, USDA, University of California; A. L. Cohen, biology, Oglethorpe University; H. B. Creighton, botany, Wellesley College; A. R. Cross, geology, West Virginia University; J. D. Dwyer, biology, St. Louis University; J. E. Gunckel, botany, Rutgers University; J. H. M. Henderson, biology, Tuskegee Institute; A. S. Holt, botany, University of Illinois; V. H. Jones, University Museum, University of Michigan; P. J. Kramer, botany, Duke University; S. L. Meyer, botany, Florida State University; L. S. Olive, botany, Columbia University; E. A. Phillips, botany, Pomona College; P. C. Silva, botany, University of Illinois; R. H. Thompson, botany, University of Kansas; R. M. Tryon, Jr., Herbarium, Missouri Botanical Garden, $8965.

International Astronomical Conference. D. Brouwer, Yale University Observatory; J. J. Nassau, Warner-Swasey Observatory, $1800.

Eighth Congress of International Society for Cell Biology. J. J. Biesele, Sloan-Kettering Institute for Cancer Research; J. D. Ebert, zoology, Indiana University; C. Grobstein, National Cancer Institute; M. R. Murray, Columbia University; I. I. Oster, Institute of Animal Genetics, Edinburgh; C. M. Pomerat, University of Texas; H. Ris, zoology, University of Wisconsin; A. M. Schechtman, zoology, University of California, $3500.

Eleventh International Ornithological Congress. R. W. Storer, University of Michigan; C. Vaurie, American Museum of Natural History; C. G. Sibley, dept. of conservation, Cornell University; G. H. Lowery, Jr., zoology, Louisiana State University, $1600.

Third Meeting of Joint Commission of Spectroscopy of the International Council of Scientific Unions. R. S. Mulliken, physics, University of Chicago, $500.

Conference on Experimental and Theoretical Nuclear Physics. M. Gell-Mann, Institute for Nuclear Studies, University of Chicago; A. C. Helmholz, physics, University of California; C. Wu, physics, Columbia University, $1500.

Conferences in support of science

University of California. Anomalous magnetization of rocks, $7400.

Columbia University. Crust of the earth, $6000.

Cornell University. Fundamental problems of perception, $4500.

Harvard University. Problems in comparative behavior, $6300.

University of Kansas. Genetic, psychological, and hormonal factors in the regulation of patterns of sexual behavior in mammals, $5000.

Massachusetts Institute of Technology. Problems in human communication and control, $5200; mathematical tables, $4700.

National Academy of Sciences. Radiation biochemistry, $3100.

Society for Study of Development and Growth. Thirteenth Symposium on Development and Growth, $1500.

Education in the sciences

City College, New York. Preliminary survey of the teaching of biochemistry, $500.

National Academy of Sciences. Committee on Educational Policies in the Division of Biology and Agriculture of the National Research Council, $1725.

National Association of Biology Teachers. Southeast Conference on Training in Biology, $15,000.

Northwestern University. Training of laboratory assistants in physics, $2200.

Studies in science

Battelle Memorial Institute. Study of research activities of trade associations, cooperative industrial research organizations, and industry-supported research activities of professional societies and associations, $42,331.

Roger Williams Technical and Economic Services, Inc. Pilot study of industry–government relationships in research by survey of present status of basic and applied research bearing on industrial fermentation processes, $15,000.

Syracuse University. Survey of past history and present status of research activities of independent and quasi-independent nonprofit research institutes and of commercial laboratories, $32,000.

Scientific information exchange

American Institute of Physics. Study of a comprehensive Russian-English translating service in the fields of physics, $3300.

University of California. Preparation of a punched card file of double star measures, $15,500.

University of Hawaii. Exchange of biological research information at the Hawaii Marine Laboratory, $6000.

Library of Congress. Compilation of lists of current biological periodicals, $8800.

Marine Biological Laboratory, Woods Hole, Mass. Participation in the exchange of scientific information at the laboratory, $1800.

National Academy of Sciences. Preparation of a monograph on the training of scientists and engineers in Russia, $1900.

Documentation, Inc. Semimechanized system for indexing and retrieving scientific information, $8000.

Wayne University. Support of *Human Biology,* $3250.

Scientific manpower

American Chemical Society. Register of scientific and technical personnel in the field of chemistry, $69,000.

Engineers Joint Council. Register of scientific and technical personnel in engineering, $25,000.

National Academy of Sciences. Register of scientific and technical personnel in the earth sciences, $5500.

University of Minnesota. Loss of talent through educational drop-out at high school graduation: a follow-up study of talented high school graduates who did not attend college, $8250.

Miscellaneous

Applications for **active duty in the Army Dental Corps** are being invited for the first time since September of last year from holders of reserve commissions as well as dentists having no military affiliation, regardless of priority classification. If recruitment is successful, it may postpone indefinitely a further Army draft call.

The East Bay Chapter of the American Institute of Architects, Oakland, Calif., in connection with the Alameda County Heart Association, is engaged in a research program to improve the **environment of the cardiac at home and at work.** Anyone who has information, purely practical as well as technical, that might be of help in the study should write to J. H. Ostwald, Director of Research, Alameda County Heart Association, 121 E. Eleventh St., Oakland 12.

The following **chemicals** are wanted by the Registry of Rare Chemicals, Armour Research Foundation of Illinois Institute of Technology, 35 W. 33 St., Chicago 16: zinc hydride; titanium trifluoride; sodium telluride; phosphonium iodide; molybdenum carbonyl; 3-methyl-1,6-hexandiol; dimethylmaleic anhydride; 6,7-dihydroxycoumaran; ethyl alpha-methylacetoacetate; omega-chloro-2,3,4-trihydroxyacetophenone; 2,4-dichlorophenylsulfoneacetic acid; gentisic aldehyde; 3-methyl-2-naphthoic acid; 1,2,4,5-tetrahydroxybenzene; 6-hydroxynicotinamide; melibionic acid; creatininease; tigonin; sedo-heptulose; carbonic anhydrase.

An atlas dealing with the **climate of Canada** has just been released jointly by the Meteorological Division, Federal Department of Transport, and the Division of Building Research, National Research Council of Canada. Included are 84 maps of Canada, each of which provides information about an important aspect of the weather elements. The atlas also contains diagrams called hythergraphs, which show the average climate through the year for many locations, including London, Paris, and Washington, D.C. The atlas may be obtained for $2 from the National Research Council, Ottawa 2.

The U.S. Civil Service Commision announces an examination for the filling of **patent adviser positions** in radio and electronics in the Signal Corps Center and Fort Monmouth, N.J. Applications will be accepted until further notice and must be filed with the Board of Civil Service Examiners, Headquarters, Signal Corps Center and Fort Monmouth, N.J.

Effective immediately, all publications intended for review in ***Philosophy of Science,*** a quarterly published by the Philosophy of Science Association, should be sent to the book review editor, J. Sayer Minas, Dept. of Philosophy, The Ohio State University, Columbus 10.

The ***Proceedings of the University Research Reactor Conference,*** held at Oak Ridge last February, is available for $1.35 from the Office of Technical Services, Department of Commerce, Washington 25, D.C.

The Fels Planetarium of Franklin Institute will again take visitors on a **round trip to Saturn.** Visual and audio techniques are employed to create the illusion of travel. This presentation will run during August and through 12 Sept. at 3 every afternoon except Monday, with extra shows on weekends. Evening demonstrations are at 8:30 Wednesday, Friday, and Saturday.

First issue of ***Scienza Nuova,*** an international quarterly of reviews and abstracts of studies in the psychosociological and humanistic sciences has appeared. It is published by the Lincombe Lodge Research Library, Boars Hill, Oxford.

Lange, Maxwell & Springer Ltd., English booksellers, have started a project to translate **Soviet scientific, technical, and medical books** into English. The first list of titles includes books on astronomy, chemistry, mathematics, medicine, meteorology, physics, and physiology.