News and Notes

Recent Advances in Astronomy

Features of the 91st meeting of the American Astronomical Society held at the University of Michigan, 20–23 June, included a symposium on turbulence and magnetic fields in the photosphere of the sun; the first joint session with the Association for Computing Machinery; and a lecture on the spectrum of the aurora and airglow, delivered by A. B. Meinel, associate director of Yerkes Observatory, in connection with his receiving the Helen B. Warner prize for astronomy. About 200 astronomers were in attendance and more than 70 papers were presented. Donald H. Menzel, director of Harvard College Observatory, was elected president for a 2-yr term.

During the symposium H. W. Babcock reported on the work that he and his father, H. D. Babcock, have been doing at Mount Wilson and Palomar observatories with a solar magnetograph—an instrument utilizing the Zeeman effect for automatically scanning the sun and recording weak magnetic fields down to a fraction of a gauss. Fine structure, with local fluctuations in time in all surface fields, suggests a close connection with turbulent elements on the sun's surface. Besides the well-known bipolar magnetic regions on the sun, the Babcocks found a few unit-pole regions which they suggest might be identified with corpuscular streams producing magnetic storms on the earth at 27-day intervals as the sun rotates. A 27-day period in cosmic ray intensity might also be a result of these fields.

In his symposium paper Martin Schwartzschild of Princeton proposed using high-altitude balloons, carrying a special telescope, for photographing the sun's surface. Above most of the earth's atmosphere he expects that photographs will reveal features as small as 300 km in diameter. Statistical methods developed by aerodynamicists for handling turbulence phenomena indicate that the most energetic eddies on the sun's surface involve features smaller than the 1000-km ones which can be observed from the surface of the earth.

S. Chandrasekhar of Yerkes Observatory closed the symposium with a discussion of the influence of Coriolis acceleration and magnetic fields in impairing convection. As he pointed out, progress on this very complicated problem is slow.

The use of rockets at heights up to 128 km for absolute-intensity measures of the Lyman-alpha region of the sun's spectrum was described by Leo Goldberg of the University of Michigan. Photon counters telemetered observations to the ground. Measurements were consistent with a model of the chromosphere in which the temperature is constant from the base of the chromosphere to an altitude of 4000 km and then increases to about 6000°K at 6000 km. A temperature of about 4600°K is indicated for the low chromosphere.

On the basis that the width of the helium line at 10,830 A is due to thermal effects, University of Michigan investigators at the McMath-Hulburt Observatory derived a temperature of 48,000° for the high region of the chromosphere that is the source of this radiation.

Studies of the intensities of 196 solar flares by McMath-Hulburt astronomers showed a close correlation between the intensity of flares and the occurrence of sudden ionospheric disturbances. Disturbances were rare at the time of low-intensity flares, but disturbances always occurred during flares of the highest intensity. Leif Owren of the Carnegie Institution of Washington and Miss Dodson of McMath-Hulburt Observatory presented a paper showing the association between flares and the onset of "noise storms" at 200 Mc/sec, as recorded by the radio telescope at Cornell University; a flare is associated with every case of a definite onset of a noise storm.

J. C. Pecker and W. O. Roberts of Harvard's High Altitude Observatory, Climax, Colo., reported that geomagnetic disturbances on the earth are smallest 3 days after the passage of an active region across the central meridian of the sun. Two or 3 days before and after this minimum of activity, there are maximums of activity that are postulated as due to corpuscular streams from the sun deflected from the active area by magnetic fields. Daily observations of the solar corona may be of great value in predicting times of geomagnetic storms. This observatory also reported the observation of a speed of 150 km/sec in the corona. This is the only clear-cut evidence of large-scale motion in the corona.

Constance S. Warwick of the Upper Air Research Observatory at Sacramento Peak, N.M., reported on heights of solar flares in connection with sudden ionospheric disturbances. Flares lower than 15,000 km have practically no associated disturbances, but above this height one-half of the flares cause disturbances. Lyman-gamma, -beta, and -alpha radiations were suggested as a possible source of the disturbances.

The identification of the coronal yellow line at 5694 A as due to calcium XV was questioned by Harold Zirin of Harvard from his computations of theoretical spin-orbit constants for p^2 configurations.

C. Y. Fan of Yerkes Observatory told how different types of auroras show different spectra. Auroral arcs produce intense hydrogen-alpha emission, whereas auroral rays show no Balmer lines of appreciable intensity. The spectrum of the auroral arc indicates that protons are impinging on the earth's atmosphere.

Investigations at Perkins Observatory on scintillation of starlight indicated that the elements producing the scintillation are 2 to 4 in. wide and up to 1.5 ft long. They move in the direction of elongation, a direction corresponding to that of winds at 10,000 ft. To avoid some of the disturbing effects of the atmosphere close to instruments, McMath-Hulburt astronomers now have a spectrograph tube 52 ft long and 4 ft in diameter from which the air can be evacuated. This is

expected to increase the resolving power of the spectrograph from 200,000 to 500,000.

Reports in the field of radio astronomy emphasized the rapid advances that are being made. At the Agassiz Station of the Harvard Observatory, Bart J. Bok and his assistants operate a 24-ft parabolic antenna in conjunction with a comparison radiometer to record profiles of the 21-cm line of neutral hydrogen. A study of the Taurus dark nebula complex reveals a correlation between the hydrogen gas and the obscuring dust in this region. Where major areas of dust exist, a strong increase in the hydrogen radio emission occurs. An investigation of the 21-cm line in the direction of the galactic center shows profiles with double peaks, suggesting either two distinct regions of hydrogen with a radial velocity difference of 10 km/sec or a "cold" region in front of a "hot" region producing an absorption effect. This cold region might be the space between the galactic spiral arm in which the sun is located and the next arm toward the galactic center.

The U.S. Naval Research Laboratory reported the discovery of radio waves from the Orion nebula and a dozen other areas at wavelength 9.4 cm. For the first time, seven other sources were reported at wavelength 21 cm. J. D. Kraus and H. C. Ko described the Ohio State University radio telescope and the great detail that is shown in its picture of the sky as seen by radio waves; 207 radio sources have been found, and the position of the center of the galaxy was given to a hundredth of a degree.

The application of television techniques to astronomy was discussed by W. A. Baum of Mount Wilson and Palomar observatories. He pointed out the limitations of direct photography with the Palomar 200-in. telescope. A 30-min exposure on an Eastman 103aO plate shows a star of magnitude 23.8. Further exposure may result in a poorer plate. Photoelectric techniques should produce results that might be expected from a 2000-in. telescope at $f/3.2$. A cooperative investigation into the transfer of photoelectrically liberated charges into photographic grains is under way. Harold L. Johnson of Lowell Observatory described an electronic integrator-type direct-current amplifier that makes possible a comparison of the radiation from bright stars with that from extremely faint stars.

Photoelectric observations of the occultations of the stars by the moon, reported by George W. Preston and Soren W. Henricksen of the Army Map Service, showed several cases of a double drop in light intensity as the star disappears behind the moon, indicating that the star may be double. The possibility of observing diameters of very large stars by this effect was suggested.

At Swarthmore, careful determinations of the masses of components of a dozen visual binaries confirmed the existence of underluminous and overluminous stars, an effect pointing toward differences in the relative abundance of elements in stars.

The variable star AG Pegasi, found to possess a magnetic field by Horace W. Babcock, was reported by University of Michigan observers Gordon Grant and L. H. Aller to have shown a continuous rise in excitation over the last few years. John S. Hall of the U.S. Naval Observatory reported on polarization observations of the light of stars in the Pleiades, 22 deg below the galactic plane. Polarization of the light was found and it indicated that clouds of dust connected with stars produce polarization as interstellar matter does. As the result of work done with the 200-in. Palomar telescope, Jesse L. Greenstein announced the discovery of clouds of gas (shells) around the supposedly nearly "dead" white dwarf stars.

Classification and distribution of M-type stars from Schmidt objective prism plates was discussed by observers of the Warner and Swasey Observatory. M-stars beyond the center of the galaxy were studied.

A. Blaauw of Yerkes Observatory investigated seven nearby associations of stars by means of the space velocities of the stars with respect to the centers of the associations. He found a difference in velocities for single and double stars. All fast-moving stars are single stars.

The problem of the chemistry of interstellar grains was emphasized by Bertram Donn of Wayne University. He said that the only way to proceed is to conduct experiments under conditions that are as near to interstellar conditions as possible. At present no work has been done at temperatures below 77°K, whereas interstellar grains have temperatures of perhaps 50°K.. Now that it is possible to obtain low temperatures, astronomers can seek the help of physical chemists in this field.

The new Super-Schmidt cameras, designed by J. G. Baker for photographing meteors, have made possible the discovery that faint meteors decelerate in the atmosphere much more rapidly than do bright meteors. This phenomenon, together with other phenomena, has led Luigi G. Jacchia of Harvard to postulate the complete breaking up of small meteors into fragments as soon as they encounter sufficient atmosphere to make them luminous.

As the result of work done largely with the 200-in. telescope, Milton L. Humason and Hugo D. Wahlquist of Mount Wilson and Palomar observatories reported a determination of solar motion with respect to 13 members of the local group of galaxies. The speed of the solar system is 292 km/sec.

A. D. Code and T. E. Houck of the University of Wisconsin showed evidence of spiral arms in the galaxy from wide-angle photographs of the Milky Way taken at Bloemfontein, South Africa. Points of cutoffs in the surface brightness of the Milky Way agree with the assumption that our galaxy is a spiral of type Sb.

The joint session with the Association for Computing Machinery was presided over by John Mauchly of Remington Rand. Four papers were presented by astronomers illustrating the kind of work that can be done with electronic calculators. Marshal H. Wrubel of Indiana University spoke on the problem of stellar evolution. Jean K. McDonald told of her application

of machines to the problem of models of stellar atmospheres. Ralph E. Williamson of Los Alamos reported on the stupendous possibilities of the machines for problems in stellar dynamics. He considered the evolution of a two-dimensional cluster of 100 stars under their mutual gravitations. Ten million years in the life of the stars occupied 1 min of computing time. In the course of the evolution of the cluster, some stars became lost to the cluster and some double stars and some multiple stars were formed. John K. Wilkinson and Lawrence H. Aller of the University of Michigan reported on some applications of punched-card techniques; 10,000 wavelengths in rotation-vibration band spectra were computed, making practical a study that otherwise might not have been attempted. The astronomers made some suggestions as to what they would like to have included in calculators, but expressed general satisfaction with the present machines.

N. E. WAGMAN
Allegheny Observatory, University of Pittsburgh

Philippine Science

The third annual meeting of the Philippine Association for the Advancement of Science took place in Manila, 3–5 December 1953, under the presidency of Juan S. Salcedo, Jr. This organization—which held its first annual meeting in 1951, the year it was formed—has a membership of 138. There are five divisions: Agricultural Sciences; Anthropology and Archeology; Biological Sciences; Chemistry; Physics and Mathematics; and Geography and Geology.

Each section presented a half-day symposium. These were scheduled in sequence, not concurrently, so that it was possible for one person to attend every session if he wished—in welcome contrast to most scientific meetings. There were no sessions for contributed papers; but there was much discussion from the floor. This was encouraged by the appointment of specific individuals to comment on each paper, thus stimulating general and animated participation.

The registrants included 79 members and 134 guests, a highly creditable showing in two distinct ways: more than half of the membership attended, and the number of persons attending because of general interest considerably exceeded the number of members present. Scientific organizations in other parts of the world will find it difficult to duplicate this record.

At the concluding evening dinner session, awards of merit were granted as follows: *Entomology,* Leopoldo B. Uichanco, dean of the College of Agriculture, University of the Philippines, Laguna; *Pharmaceutical chemistry,* Patrocinio Valenzuela, dean of the College of Pharmacy, University of the Philippines, Diliman, Quezon City; *Anthropology,* H. O. Beyer, head, department of anthropology, Museum and Institute of Anthropology and Ethnology, University of the Philippines, Diliman, Quezon City.

Joaquin Marañon, director of the Institute of Science and Technology, Manila, was elected president of the Association for the present year. Ramon Samaniego of the Bureau of Soil Conservation, Manila, continues as secretary.

R. C. MILLER
California Academy of Sciences, San Francisco, California

Science News

In a paper scheduled to appear soon in *Science,* Kiku Nakao, Louis Plzak, and William Bethard describe the use of radioactive iron at the Argonne Cancer Research Hospital in Chicago to study the *in vitro* **synthesis of hemoglobin in erythrocytes** of pigeons. The information obtained from these experiments suggests that the mechanism operative in the formation of the oxygen-carrying red pigment *in vitro* may be different from the one operative *in vivo.*

That better jet fuels can result from a study of chemical reactions taking place high in the atmosphere has been pointed out by Joseph Kaplan, professor of physics at the University of California, Los Angeles. These reactions produce "airglow," which has been found to be "intimately connected" with the **chemistry of jet fuels.** Information on the various combinations of oxygen and nitrogen needed for laboratory studies, he said, "can be gotten from experiments made for us by nature" several miles overhead. Dr. Kaplan gave this information to the House Committee on Appropriations while justifying appropriations for the International Geophysical Year, scheduled for 1957–58. The National Science Foundation has requested a supplemental appropriation of $2½ million for fiscal year 1955 to finance the U.S. program for IGY.

John Franklin Carlson, 54, professor of physics at Iowa State College, died in Ames, Iowa, on 5 Apr. A gifted scholar and teacher, he was educated at the University of California where he received the doctoral degree in 1932. After 1 yr as a research associate at California, he spent 3 yr at the Institute for Advanced Study at Princeton. During this period he and J. Robert Oppenheimer published a paper that laid the foundation for extensive theoretical research on cosmic ray showers.

In 1937 Dr. Carlson went to Purdue University, where he remained until 1942 when he was called to the Radiation Laboratory at Massachusetts Institute of Technology. He went to Iowa State in 1946 and 2 yr later became professor of physics and senior physicist with the Ames Laboratory of the Atomic Energy Commission. He taught in the fields of vibration and sound and quantum theory.

As a tribute to the inspiration and assistance he gave to those with whom he taught and worked, his friends and colleagues have established a fund in his honor to bring to Iowa State each year an outstanding

scholar who will deliver the John Franklin Carlson Lecture on some aspect of physical science, its philosophical implications and its relation to human affairs.

Perfectly **petrified insects,** spiders, and mites that lived 25 million yr ago during the Miocene period have been discovered by U.S. Geological Survey workers. The ancient creatures are being recovered by the dozens from nut-sized nodules of limestone taken from lake bottom deposits under the Mohave Desert. The nodules are dissolved in formic acid, which reveals the perfectly preserved fossils. They look as if they were cast in milk glass, because they have been turned into silica by a natural process that is not yet understood. This find, first made by Allen Bassett of the Geological Survey and considered a major event in entomological history, is discussed in more detail in this issue of *Science,* page 228, by A. R. Palmer and Dr. Bassett.

John W. Coulter, professor of geography at the University of Cincinnati, has begun a study of **population problems** on the island of Pinglap in the Eastern Carolines. Pinglap is believed to be one of the most overpopulated areas in the Pacific with 650 people living on two-thirds of a square mile of land. The atoll was selected as a "pilot" island in an attempt to find measures to solve or alleviate the overpopulation throughout the Pacific islands. Dr. Coulter is making the survey for the U.S. Trust Territory of the Pacific Islands Administration, the U.S. Navy, and the Pacific Science Board of the National Research Council.

This summer for the first time, a convoy of Canadian vessels will deliver supplies for the joint **Canadian-United States Arctic weather stations** in the Queen Elizabeth Islands, with the exception of the most northerly one, Alert. In referring to the supply project, the Minister of Transport said that "we hope to take in supplies for Alert Bay in 1955." Heretofore, the U.S. has furnished the ships to carry out the annual mission.

Australia's well-known **Lake Eyre,** ordinarily a vast dry desert, for the first time within living memory is filled with water and teeming with fish. Scientists who visited the lake in former years said it would never be full of water again and that fish could not live there because the water would be too salty.

Approximately 2000 Americans are believed to have been affected by a **snail-carried disease,** schistosomiasis, or katayama disease, during World War II and never treated. About 1500 cases were diagnosed and treated during the Leyte campaign and it was also prevalent among prisoners-of-war in the Philippines. The disease, which attacks man through free-swimming larvae developed in snails, results in thickening of the intestinal wall, cirrhosis of the liver, and urinary bladder disease.

John L. Wolford and John M. Rumball reported in the 17 July issue of the *Journal of the American Medical Association* on one case recently discovered in a former Japanese prisoner-of-war. They point out the difficulty of diagnosis and the importance of looking for the disease in similar instances, since early treatment can prevent further damage.

Development of a **method of growing yeast** that improves its value as a supplement to food and fodder through greater production of the amino acid methionine has been announced by J. S. Chiao and W. H. Peterson, University of Wisconsin biochemists. They grew 20 different species of yeast on various types of media and found that six species could be made to produce greater quantities of methionine by increasing the amount of nitrogen salts available to them. Production of methionine also is greatly increased if another amino acid, cystine, is added to the media. Yeast is widely used as a supplement in poultry feed and is one of the substances now under study as a possible aid in feeding the undernourished peoples of the world.

University of Illinois engineers have found that high-silicon steel rails, of little or no more cost than standard carbon steel rails, may be the solution to a new **rail wear problem** due to the modern, heavy diesel locomotive. In laboratory tests, silicon rails stood up twice as long as those of standard carbon steel. Some are now being service-tested on railroads.

As many as six **whooping cranes,** including young, have been seen in Canada's Wood Buffalo National Park. The world population of this crane is only 24. They are known to nest in Texas but their summer nesting ground is a long-standing mystery.

A new voluntary health association, **the National Foundation for Muscular Dystrophy, Inc.,** has been established with headquarters in the Fisk Building, 250 West 57 St., New York 19. It is dedicated to the sponsorship of research in muscular dystrophy and to the total care of the dystrophy patient. Officers are pres., Paul G. DeMuro, Passaic, N. J.; chairman of the Board of Directors, David L. Wilkoff, Pittsburgh; and chairman of the Medical Advisory Board, Charles A. Janeway, Boston.

The foundation is sponsoring research in orthopedics, neurology, pathology, and basic chemistry at the Children's Medical Center, as well as in investigatory study at the New York State Rehabilitation Hospital, West Haverstraw, N.Y., in cooperation with the New York state and city departments of health.

A 210,000-acre area has been set aside by the Venezuelan Government as the **Henry Pittier National Park** for the benefit of naturalists and other scientific investigators. Swiss-born Henry Pittier, a former U.S. Department of Agriculture scientist, spent the last 37 yr of his life in Venezuela and became one of its greatest scientists; he died in 1950.

The area includes a verdant forest on top of the Andes, thick jungle on the slopes, and wasteland on the plains near the sea, and part of large fresh-water Lake Valencia. The jungle area, known as the

"shrouded forest" because of the strange white mist that rises from the moisture-soaked earth, has no human inhabitants but is rich in wild life.

S. Dillion Ripley, II, assistant professor of zoology and associate curator of Yale's Peabody Museum, hopes that his present six-month trip to Indonesia may solve the problem of what happens when two similar bird groups are brought together for the first time. Over an extended period of time the Asian bird fauna has gradually moved into the many Indonesian islands, while the fauna from the Australian continent has moved northward into the same islands. He believes that on the island of Halmahera, midway between Dutch New Guinea and the Philippines and on the "meeting line" of the faunas, he may be able to observe the **natural process of evolution** as it involves the two bird groups. The expedition will be financed by a Guggenheim fellowship and a grant from the National Science Foundation. The *National Geographic Magazine* will furnish photographic equipment.

The cause of strange "false" fractures, so-called pseudofractures, that occur in osteomalacia, a disease marked by softening of the bone, apparently has been found by physicians at the University of California School of Medicine. In x-ray pictures the **pseudofractures** appear as dark bands on the outer layer of the bone. Many of them are present in almost symmetrical order on the shoulder blade, the ribs, and other bony structures. They give the appearance of fractures that have not completely healed.

Recently, Howard L. Steinbach, Felix O. Kolb, and Rutherford Gilfillan made detailed studies of a patient with osteomalacia who had many pseudofractures throughout the skeleton. They found the "false" fractures occurred where blood vessels pass adjacent to the bone. The pulsation of the vessels, they suggest, exerts sufficient pressure to cause erosion of the softened bone, thus producing the pseudofractures. . . . In the past they have been attributed to unusual muscular stress bringing pressure on the bones.

A memorial in Mackinac Island, Mich., has been dedicated to William Beaumont, who made the first important study of digestion of food in the stomach. The shrine to a classic research in medicine is a reconstruction of the retail store of the American Fur Co., where in 1882 Dr. Beaumont, an Army surgeon stationed at Fort Mackinac, was called to attend Alexis St. Martin who had been accidentally shot through the stomach. For a 2-yr-period Dr. Beaumont tried to heal the wound, but without success. It was them that he started an 8-yr study of the physiology of digestion. He published his findings in 1833. The Michigan State Medical Society is sponsoring the **Beaumont Memorial.**

Robert P. Sharp, chairman of the division of geological sciences at the California Institute of Technology, is heading a seven-man summer expedition, sponsored by the Office of Naval Research for **glaciological research** at Saskatchewan Glacier in the Canadian Rockies and at Malaspina Glacier in Alaska. The chief project is to establish a bore hole approximately 1500 ft deep and extending from the surface to the bottom of the ice, near the upper reach of the Saskatchewan Glacier. The pipe used as a drill stem for the electrical drilling operation will be left in the hole so that its deformation may be measured from year to year.

An inclinometer reading of the bore hole established in 1951 near the center of Malaspina Glacier will be made. These investigations are aimed at determining whether the Malaspina Glacier, which rests on a comparatively flat surface, and the Saskatchewan Glacier, a mountain valley ice flow, experience the same mode of flow below the surface. Other members of the team include Samuel Epstein, Mark Meier, and Gunnar Bergman.

Scientists in the News

Willard Bascom, research engineer with the University of California's Scripps Institution of Oceanography, La Jolla, is on leave of absence for 1 yr to serve as executive director of the National Research Council's advisory committee on civil defense.

Five employes of the U.S. Department of Agriculture have received Distinguished Service awards for outstanding achievements in research.

Esther L. Batchelder, Human Nutrition Research Branch, Agricultural Research Service, Beltsville, Md., for research in food and nutrition and application of results to improved national and international utilization of food.

Richard T. Cotton, entomologist, Biological Sciences Branch, Agricultural Marketing Service, Manhattan, Kan., leadership in the field of control of insects attacking stored grains and cereal products.

George M. Darrow, horticulturist, Horticultural Corps Research Branch, Agricultural Research Service, Beltsville, Md., contributions to the breeding and improvement of small fruits.

Ralph A. Rusca cotton technologist, and **Ray C. Young,** mechanical engineer, Southern Utilization Research Branch, Agricultural Research Service, New Orleans, a new-type opening machine for lint cotton that permits economic processing of mechanically harvested cotton used in the manufacture of textiles.

John Biggs, Jr., chief judge of the U.S. Court of Appeals, Wilmington, Del., has been given the American Psychiatric Association's Isaac Ray award for notable contribution to the field of legal problems connected with mental disorders. He will deliver a series of 6 lectures on legal aspects of psychiatry in November and December at the University of California medical and law schools.

John O'M. Bockris, London, has been appointed professor of electrochemistry at the University of

Pennsylvania and **Donald C. Dittmer** will join the staff as an instructor in organic chemistry. Dr. Bockris served on the faculty of Imperial College before coming to the university as a visiting professor of chemistry last year. Dr. Dittmer has been a postdoctoral research fellow in Harvard University's department of chemistry.

The following are among those who have recently received **honorary doctoral degrees.**

University of Wisconsin: **Gregory Breit,** professor of physics, Yale University; **Earnest Albert Hooton,** professor of anthropology, Harvard University (posthumously); **Elvin Charles Stakman,** emeritus professor of plant pathology, University of Minnesota, and a past president of the AAAS.

University of Nebraska: **Jay W. Forrester,** director of the Digital Computer Laboratory, Massachusetts Institute of Technology.

Polytechnic Institute of Brooklyn: **Crawford H. Greenewalt,** president of E. I. du Pont de Nemours of Delaware.

Lorenzo L. Franceschini, Rome, is at Stanford Research Institute to study American methods of industrial research as the newest participant in SRI's industrial fellowship program. Former chief of the economics and labor section of Italy's National Productivity Committee, he will spend a year at the institute.

Alfred Gellhorn, director of the Institute of Cancer Research at Columbia University and chief of the Medical Service at the Francis Delafield Cancer Research Hospital in New York, and **Leopold Arnaud,** Columbia University School of Architecture, are spending 2 mo on a lecture tour in Brazil, Uruguay, Argentina, Chile, Peru, Colombia, and Venezuela under the International Educational Exchange Program.

Ben Hilbun was inaugurated in July as the 11th president of Mississippi State College.

The annual award of the Association for the Help of Retarded Children has been presented to **Leo Kanner** who established at Johns Hopkins Hospital the first children's psychiatric unit in connection with the pediatrics department.

Otto A. Krueger has been appointed manager of the International Harvester Co.'s industrial engineering and construction department, succeeding **J. R. Allan** who has retired. **Harold W. Parthemer,** construction engineering consultant, is now assistant manager.

Elizabeth T. Maguire, formerly of the United States Testing Co., Hoboken, N.J., has joined Lederle Laboratories as a chemist in the pharmaceutical control laboratory.

Monroe H. Martin, member of the University of Maryland faculty since 1933, has been appointed director of the university's Institute for Fluid Dynamics and Applied Mathematics. He was head of the mathematics department from 1943 until 1952 when he became acting director of the institute.

Thomas D. Moore is retiring as head of the department of urology at the University of Tennessee College of Medicine but will continue as professor of urology. Dr. Moore is now serving as president of the American Urological Research Foundation and is a past president of the American Urological Association.

On 27 Aug. **S. Ralph Powers,** professor emeritus of Teachers College, Columbia University, will sail with his wife for Cairo, where he will be a guest professor in the teaching of science at the Abbassia Men's Teacher Training College under a Fulbright award. He was expressly invited to this post by the dean of the college and the Egyptian Minister of Education. Dr. and Mrs. Powers will return to their home in Haworth, N.J., in June 1955.

Charles C. Price, former professor and head of the department of chemistry at the University of Notre Dame, has been named Blanchard professor of chemistry and director of the Harrison Laboratory of Chemistry at the University of Pennsylvania. The posts were held formerly by **Hiram S. Lukens,** who retired last year.

William E. Rand will terminate as director of physical sciences research at Stanford Research Institute in August to become a vice president of Newhall Land and Farming Co. An engineering graduate of the Massachusetts Institute of Technology, Mr. Rand will direct a future development program for the company.

Work has been started around Ica in the southern part of Peru by the fourth archeological team sent to that country by the University of California since 1899. In charge is **John H. Rowe,** associate professor of anthropology and assistant curator of South American archeology in the institution's Museum of Anthropology.

Harry C. Schmeisser has retired after 33 yr as professor of pathology at the University of Tennessee Medical Units and attendant to John Gaston Hospital. He will be appointed professor emeritus of pathology and consultant to city hospitals in Memphis. He joined the university staff in 1921.

Patrick W. Skehan, professor of Semitic and Egyptian languages at the Catholic University of America, will spend 1954–55 in Jerusalem, where he will do research work at the Palestine Archeological Museum and serve as annual professor of the School of Oriental Research.

George S. Smith has been made a vice president of the Johns-Manville Products Corp. and director of engineering for the Johns-Manville Corp., the parent concern. He joined the company in 1929.

Edward H. Spicer, professor of anthropology at the University of Arizona, has joined the staff of Stanford Research Institute for a summer of research at the San Carlos Apache Indian reservation 100 mi east of Phoenix. The results of his studies will be added to the work of the SRI team already investigating the economic problems faced by the Indians. The team includes a sociologist, geologist, agriculturist, forestry expert, and economists.

Two international honors have been awarded **Edward J. Squire,** head of Brooklyn Polytechnic Institute's department of civil engineering: the Order of Scientific Merit of the Humanist Institute of France, and Knight Commander with Star of the Order of the Gold Cross of the Military Chapter of Cyprus and Jerusalem. The latter order, with headquarters in Rome, is an independent laymen's order that was prominent in the early Medieval period and has been revived.

Arthur L. Tatum, 70-yr-old professor and chairman of the department of pharmacology at the University of Wisconsin, will retire this year after 26 yr of service with the university. He graduated from Penn College, Oskaloosa, Iowa, with a B.S. degree and earned his M.S. at the University of Iowa. In 1913 he received his Ph.D. from the University of Chicago and the following year graduated in medicine from Rush Medical College. He has served on the faculties of the universities of Colorado, Pennsylvania, South Dakota, and Chicago.

More than 175 publications bear witness to his research on malfunction of the thyroid gland, hypnotic drugs, and chemotherapy. In 1942 he was awarded the Charles Mickle fellowship by the University of Toronto and in 1948 the degree of doctor honoris causa by Peru's Greater National University of San Marcos of Lima. The next year he was made an honorary member of the Society of Biology of Montevideo.

Meetings

Significant among the sessions to be held at the 37th annual meeting of the **American Dietetic Association** will be those concerning the most recent trends in the field of nutrition. The meeting is scheduled for 26–29 Oct. at the Philadelphia Commercial Museum, Philadelphia. Frederick J. Stare of the Harvard Schools of Medicine and Public Health will open the session, "Nutrition advances," on 26 Oct. With him will appear Margaret Mead of the American Museum of Natural History, New York, and David M. Hegsted of the Harvard School of Public Health.

During a session devoted to "Nutrition in the world," August R. Lindt, a native of Switzerland who is chairman of the executive board of the United Nations Childrens Fund, will discuss the nutrition of children of many lands. Andromache Sismanidis, nutrition representative of the F.A.O., will draw upon her extensive travels in other countries to discuss their food habits. Elda Robb of Simmons College will describe her experience in establishing, last year, a college of nutrition and home economics in Jerusalem.

Charles Glen King of the Nutrition Foundation, Inc., New York, and Margaret A. Ohlson of Michigan State College will participate in the session, "Nutrition research."

Leonard A. Maynard of Cornell University will speak on nutritive additives during the session on "Nutrition fronts." Appearing with him will be Olaf Mickelsen of the National Institutes of Health, who will speak on "Nutrition and alcoholism."

The field of diet therapy will receive attention from Herbert Pollack, Mt. Sinai Hospital in New York, who will discuss adequate therapeutic diets; Paul Gyorgy, Hospital of the University of Pennsylvania, Philadelphia, who will speak on trends in infant feeding; Harold E. Harrison, Baltimore City Hospital, who will discuss vitamin D and calcium metabolism in children; and Mark A. Hayes, Yale University School of Medicine, who will present a paper on "A re-evaluation of nutritional requirements during complicated convalescence."

The New York section of the **American Institute of Chemical Engineers** will conduct a symposium 13 Oct. at the Hotel Statler, New York. Concurrent sections will be devoted to the topics "New developments in the petroleum and chemical industries" and "Cost estimations." More than 500 chemical engineers, executives, and students from the eastern part of the U.S. are expected to attend.

Some 140 scientists from 15 countries assembled at Lund, South Sweden, 1–5 July for an international **congress on spectroscopy.** Special honor was paid to the memory of J. R. Rydberg, whose pioneering work on spectral analysis largely formed the basis for modern achievements in the field.

Analyzing the flavor of foods and beverages, constructing buildings with plastics, and measuring the harmful effect of air pollution on plants and animals will be among the topics covered in more than 1300 scientific papers to be presented at the 126th **national meeting of the American Chemical Society** in New York 12–17 Sept. Some 12,000 chemists and chemical engineers from all parts of the United States and many foreign countries will attend the meeting and take part in the technical sessions sponsored by the Society's 21 scientific and technical divisions.

W. Albert Noyes, Jr., former president of the Society and chairman of the department of chemistry in the University of Rochester, will receive the Priestley medal at a general assembly 13 Sept. "Thirty years of photochemistry" will be the title of his address. Harry L. Fisher, Los Angeles, will present his presidential address, "The challenge of the American Chemical Society," at that time.

The **Pacific Slope Biochemical Conference,** an annual conference of biochemists from institutions of the

Pacific Slope states, will meet with the AAAS in Berkeley within the period 26–31 Dec. for the presentation of research progress reports. A dinner will take place on the evening of the day of the meeting.

A 1-day program will be held with concurrent sessions if the number of papers submitted make this necessary. Titles of papers should be submitted to the chairman, David M. Greenberg, Department of Physiological Chemistry, University of California, Berkeley, *not later than 1 Oct.*

In June the Middle-East Science Co-operation Office, with the assistance of the Lebanese Society of the Friends of Trees, held a symposium in Beirut on the **"Protection and conservation of nature in the Near East."** More than 50 zoologists, botanists, ecologists, foresters, geologists, soil scientists, and educators from Middle Eastern and Western countries met to exchange views and results of their work. In addition to study groups on fauna, flora, soil, and education, four plenary sessions were devoted to general topics.

The **Society for the Study of Human Work,** established in Nürnberg last year, held its first congress in March. The two principal themes were (i) the present status and impending tasks of the disciplines concerned with human work and (ii) man's readiness to perform. The disciplines represented in the society are physiology, psychology, education, sociology, and engineering. The society will utilize the *Zentralblatt für Arbeitswissenschaft und soziale Betriebspraxis* as its house organ.

Physicians and research scientists from more than 40 countries will attend the 2d **World Congress of Cardiology** that will convene in Washington, D.C., 12–17 Sept., jointly with the 27th **Scientific Sessions of the American Heart Association.** It will be the largest and most important cardiovascular meeting ever held in the Western Hemisphere.

The scientific program—in English, French, and Spanish—will be held at the National Guard Armory, where translation facilities will be provided for symposiums, panel discussions, and special features. In addition, over 250 papers will be presented during the formal scientific sessions to be held simultaneously in separate rooms. The discussions and reports will cover such subjects as coronary heart disease, rheumatic fever, hypertension, blood volume, heart surgery, congenital heart disease, electrocardiography and ballistocardiography, atherosclerosis, and diagnostic techniques. The special features will include the Charles Laubry lecture by John Parkinson of London; the Paul White prize lecture of the Argentine Society of Cardiology by M. Rene Malinow, D. Hojman, and A. A. Pellegrino, Buenos Aires; and the George Brown memorial lecture of the American Heart Association by Alan Burton of London, Ontario.

Paul D. White of Boston, executive director of the National Advisory Heart Council, an advisory body for the National Heart Institute, is chairman of the organizational committee for the Congress and also will serve as president. Cochairmen are E. Cowles Andrus, president of the American Heart Association, and James Watt, director of the National Heart Institute.

Scientific as well as commercial exhibits and medical film showings are scheduled. Other events will include a formal banquet featuring presentation of the 1954 Howard W. Blakeslee awards, and a series of medical sightseeing tours in the Washington area. Post-Congressional tours to leading university centers and cardiac clinics in the United States and Canada are also planned. Application blanks and detailed information may be obtained from L. W. Gorham, Secretary General, Second World Congress of Cardiology, 44 East 23 St., New York 10.

Society Elections

American Society of Medical Technologists: pres., Ruth Hovde; pres.-elect, Barbara Isbell; rec. sec., Sister Mary Simeonette Savage; treas., Kathryn Dean.

American Society of Plant Physiologists: pres., Alden S. Crafts, University of California, Davis; v. pres., Harry A. Borthwick, U.S. Bureau of Plant Industry Station, Beltsville, Md.

Astronomical League: pres., James H. Karle, Portland, Ore.; v. pres., Russell C. Maag, Sedalia, Mo.; sec., Joseph A. Anderer, Chicago, Ill.; treas., Mrs. Ralph N. Buckstaff, Oshkosh, Wis.; exec. sec., Mrs. Wilma Cherup, Pittsburgh, Pa.

Chi Beta Phi: pres., Donald C. Martin, Marshall College, Huntington, W. Va.; 1st v. pres., Mrs. Daniel Marks, Rohm and Haas, Huntsville, Ala.; 2nd v. pres., Esterina Shems, Lynchburg College, Lynchburg, Va.; 3rd v. pres., Celia Calloway, Mary Washington College, Fredericksburg, Va.; sec.-treas., Conrad B. Park, Lenoir-Rhyne College, Hickory, N.C.

Maryland Academy of Sciences: pres., Allan C. Davis, Davis Bottling Co.; v. pres., Richard H. Turk, Permco Corp.; treas., William J. Casey, Maryland Trust Co.; sec., James W. Easter, Mt. Vernon-Woodberry Mills.

National Association of Science Writers: pres., Alton L. Blakeslee, Associated Press; v. pres., John E. Pfeiffer, New Hope, Pa.; sec.-treas., Roland Berg, Look Magazine.

National Wildlife Federation: pres., Claude D. Kelley, Atmore, Ala.; sec., Charles H. Callison, Washington, D.C.; treas., Louis W. Wendt, Great Falls, Mont. Vice presidents are Paul A. Herbert, East Lansing, Mich.; John L. Curran, Providence, R.I.; and Robert Miller, Spokane, Wash.

Phi Lambda Upsilon: pres., James M. Church, Columbia University; v. pres., Carl S. Carlson, Morton

Salt Co., Chicago; sec., Thomas B. Cameron, University of Cincinnati; treas., William G. Schrenk, Kansas State College.

Society for Investigative Dermatology: pres., Clarence S. Livingood, Detroit, Mich.; v. pres., J. Walter Wilson, Los Angeles, Calif.; sec.-treas., Herman Beerman, Philadelphia, Pa.

The **Wildlife Society:** pres., Gustav A. Swanson, Cornell University; v. pres., Thomas R. Evans, Wildlife Management Inst., St. Paul, Minn.; sec., Daniel L. Leedy, Fish and Wildlife Service, Washington, D.C.

Education

Speakers have been announced for the **Advanced Course in Radioisotope Applications in Biochemistry,** to be offered 16–24 Sept., as was announced in *Science* for 26 Mar., page 406. The topics listed, with a partial list of speakers, are as follows: "Mineral metabolism," W. D. Armstrong and R. H. Gourley; "Physiological kinetics," A. K. Solomon and J. Z. Hearon; "Hydrogen metabolism," Birgit Vennesland; "Stable Isotopes," Allan Brown; "Phospholipid problems," John L. Wood and Donald Zilversmit; "Proteins and amino acids," Henry Borsook and Paul C. Zemecnik; "Nucleic acids and nucleotides," Van R. Potter, Cyrus Barnum, and Elliott Volkin; "Purines and pyrimidines," G. Robert Greenberg, D. Wright Wilson, and John M. Buchanan; "Carbohydrate and fat metabolism," Martin Gibbs and N. E. Tolbert.

Application blanks and additional information on the course may be obtained from the Special Training Division, Oak Ridge Institute of Nuclear Studies, P.O. Box 117, Oak Ridge, Tenn.

Agronomy Field Day will be held at South Dakota State College on 16 Sept. The one-day program will feature new work in corn, alfalfa, sorghum, soybeans, pastures and soil fertility, according to U. J. Norgaard, Extension Service agronomist.

The Ohio State University Board of Trustees has approved plans and specifications for a **Chemical Abtracts Building** to be erected on the campus at an estimated cost of $554,292. The university and the American Chemical Society will share equally in the cost of the structure. The three-story brick building, 65 by 107 ft, will house all campus operations of *Chemical Abstracts.* The journal reports information in 33 fields of chemistry and chemical engineering as it appears in scientific journals throughout the world.

The "directory service" that its archives provide is of vital importance in chemical research and development. *Chemical Abstracts* has occupied a portion of the university's McPherson Chemical Laboratory since 1928. The new building will contain a two-level library stack room, three conference rooms, editorial offices, a reading room, a research department, and a shipping and stock room.

One-fourth of the students entering as freshman in the **Cornell University College of Engineering** in September will receive scholarships from the university with a total annual value of more than $95,000.

A new type of science course, made possible by an anonymous grant of $2500, will be offered by the University of Bridgeport (Conn.) beginning with the fall semester. To be under the supervision of Harry L. Wechter, assistant professor of chemistry, the course will deal basically with the philosophic point of view, intertwining the sciences with philosophy, yet without emphasizing that branch of learning. It will develop a broad concept of science rather than stressing any one particular area such as physics or chemistry. Laboratory work is involved. Required of student nurses, the course also will be open to other students. The plan is eventually to make it a required course for all students.

Construction of the $1,500,000 **Norman W. Church Laboratory of Chemical Biology** at the California Institute of Technology is scheduled to begin in August.

Georgia Institute of Technology recently established a curriculum leading to the B.S. degree in **Physics, Geophysics Option.** Requirements, substantially those suggested by the Geophysical Education Committee of the American Institute of Mining and Metallurgical Engineers in 1943, include the equivalent of an undergraduate major in physics with minors in both mathematics and geology, as well as courses in chemistry and engineering.

A graduate program for **teachers of technological subjects,** which will combine instruction in educational techniques with engineering study, will be inaugurated this fall at New York University. An M.A. degree from the NYU School of Education will be conferred upon graduates who complete 14-18 credits in education and at least 16 credits in engineering subjects. Directing the program are Thorndike Saville of the College of Engineering and Ernest O. Melby of the School of Education.

The **University of Illinois Medical School** has been presented with the private bookcases of Dr. Oliver Wendell Holmes by Dr. and Mrs. Bernard Appel of Lynn, Mass.

Six refresher courses on the laboratory techniques of the serology of syphilis and one on the management and control of syphilis serology by the regional laboratory will be held at the **Venereal Disease Research Laboratory** in Chamblee, Ga., starting at various times between Sept. 1954 and May 1955. The courses are designed to acquaint the student with the most widely used American methods for the serodiagnosis of syphilis and the latest developments or modification of technique.

Reservations will be made as soon as applications are received and lists will be closed one month before the starting date of each course. Address correspond-

ence to the Director, Venereal Disease Research Laboratory, Division of Special Health Services, PHS, Department of Health, Education, and Welfare, P.O. Box 185, Chamblee, Ga.

A Cockcroft-Walton accelerator that has seen nearly 5 yr of active service at Oak Ridge National Laboratory has been transferred to the physics department of **Vanderbilt University,** where it will be available for nuclear structure studies.

Grants, Fellowships, and Awards

The following **AAAS research grants** have been awarded:

Kansas Academy of Science to L. L. Hodgdon, Kansas State College. Archeological investigations in the Manhattan area.

South Dakota Academy of Science to E. J. Hugghins, South Dakota State College. Trematode studies at Oakwood Lakes, S. Dak.

West Virginia Academy of Science to C. Norman, West Virginia University. Preservation of bull semen frozen at low temperatures and its application to artificial insemination.

West Virginia Academy of Science to M. Feil, Marshall College. Effect of various chemicals on the learning ability of a dull strain of rats.

The **American Urological Research Foundation, Inc.,** has awarded the following research grants totaling nearly $35,000.

G. W. Fish and P. B. Hudson, Francis Delafield Hospital, Columbia University. Urinary steroid patterns in the post-adrenalectomy state, $2500.

T. S Danowski, Children's Hospital, University of Pittsburgh. Renotropic property of growth hormone in chronic renal disease, $3850.

J. A. Benjamin, University of Rochester. Normal and abnormal ureter in humans and animals, $5500.

D. F. McDonald, School of Medicine, University of Washington. Role of the urine in vesical neoplasm, $8424.

E. V. Moore, University of California, Los Angeles. Treatment of urological tumors by interstitial injection of radioactive chromium phosphate, $3051.

R. Baker, Georgetown University Medical School. Relation of the endocrine system to renal calcification, $3348.

E. L. Prien and B. Walker, Boston University. Prevention of recurrent calcium containing urinary calculi in stone forming patients, $6500.

The **Colgate-Palmolive Co.** has made a $5000 grant to Rutgers University for basic radioisotopic studies in the field of therapeutic agents. The work will be carried out by the university's Bureau of Biological Research.

The **James Picker Foundation** has announced the award of nine grants and two fellowships in radiological research for the coming year. These awards, totaling approximately $42,000, were made on recommendation of the Committee on Radiology of the National Academy of Sciences–National Research Council.

Grants

H. Doubilet, New York University College of Medicine. X-ray visualization of the biliary and pancreatic ducts.

J. Friedman, Mount Sinai Hospital, Minneapolis. Effect of emotion on the mucosal pattern of the small bowel.

J. W. Grossman and J. L. Howarth, Lovelace Foundation for Medical Education and Research, Albuquerque. Development of techniques for dose estimation, using a cobalt-60 unit.

G. Jacobson and D. C. Balfour, Jr., University of Southern California School of Medicine. Use of pharmacological agents in the radiologic diagnosis of gastrointestinal disease.

H. Levi, Zoophysiological Laboratory, University of Copenhagen. Autoradiographic studies of alpha and soft beta emitters in animal tissue.

G. Middlebrook, National Jewish Hospital, Denver. Pulmonary angiographic studies pre- and postresection in tuberculosis and simulating diseases.

B. E. W. Nordenstrom, Sabbatsberg Hospital, Stockholm. Development of new principle for x-ray examination of pulmonary vessels.

H. P. Plenk, University of Utah College of Medicine. Influence of drugs on radiation reaction.

W. J. Tobin, Georgetown University School of Medicine. Bone architecture.

Fellowships

M. G. Smyth, Jr., University of Pennsylvania School of Medicine, with R. H. Chamberlain. Distribution and dosage of colloidal and particulate sources of radioactivity.

K. Subbarao, Bellevue Hospital, with M. H. Poppel. Regional ileus as a roentgenological manifestation of disease.

The possibility that lesions caused by injury or disease in any particular part of the brain produce similar psychological effects in all individuals is being studied at the Indiana University Medical Center under a $3250 grant from the **James McKeen Cattell Fund** of New York City. Ralph Reitan is project director.

The **National Research Council of Canada** has awarded 23 medical research fellowships for the coming year.

Senior medical research fellows

W. G. B. Casselman. University of Toronto, medical research.

C. N. Crowson. Queen's University, medical research.

P. C. Fitz-James. University of Western Ontario, medical research.

R. W. Gunton. University of Toronto and Toronto General Hospital, medical research.

F. C. Heagy. University of Western Ontario, biochemistry and bacteriology.

H. Kalant. University of Toronto, pathological chemistry.

J. T. Nichol. University of Western Ontario, biophysics.

J. W. Pearce. University of Western Ontario, medical research in physiology.

Graduate medical research fellows

D. E. Bergsagel. University of Oxford, blood coagulation.

R. W. Cornett. Queen's University, cardiovascular physiology.

T. E. Cuddy. University of Manitoba, cardiovascular physiology.

A. Davignon. Hotel Dieu Hospital, physiology and biochemistry.

F. M. Hill. University of Toronto, pathology.

N. Kalant. New England Center Hospital, Boston, endocrinology.

S. J. Klebanoff. University of Toronto, pathological chemistry.

D. Ley. Toronto Western Hospital, iron metabolism in neoplastic disease.

A. Malkin. McGill University, biochemistry.

J. C. Nixon. University of Toronto, biochemistry.

J. E. Nixon. University of British Columbia, physiological and pharmacological problems related to anesthesiology.

P. Pollock. Mt. Sinai Hospital, New York, cardiology.

I. C. Radde. University of Toronto, endocrinology.

R. F. Scott. London Postgraduate Medical School, Hammersmith Hospital, pathology.

J. M. Vale. University of Toronto, endocrinology.

The **National Science Foundation** will award individual grants to defray partial travel expenses of a limited number of scientists who will attend the **6th International Congress of Anatomy** in Paris, July 1955. Applications forms may be obtained from the National Science Foundation, Washington 25, D.C. *They must be submitted by 2 Jan. 1955.*