their singularness of purpose, and in their dispassioned and logical analysis. Younger geneticists could study them with profit.

Stadler was not a prolific writer; his publications number only 64. He published only when he felt he had something important to say and was not interested in accumulating a long bibliography. Perhaps his standards were too high in this respect, because it is regrettably true that a great deal of significant work remains unpublished. It is a fortunate circumstance that he often included conclusions from unpublished studies in his numerous symposium papers, and for this reason these publications are among his most valuable contributions. It is here that the extent and comprehensiveness of Stadler's mutation studies are most evident, and much of his influence on genetic thought stems from his participation in symposiums. A lucid and persuasive speaker, he was in demand as a lecturer and spoke before many scientific groups.

Although unquestionably an outstanding authority in his field, Stadler was not one of those specialists with little or no appreciation of other intellectual pursuits. On the contrary, he was a man of culture and wide interests, one whose conversations revealed a broad and tolerant mind. He accepted the critical and unyielding nature of his illness courageously and philosophically. I had the good fortune to visit briefly with him just as he was leaving for the hospital to undergo the operation from which he never recovered consciousness. Never once did he touch on his physical condition, of which he was well aware, but with his usual contagious enthusiasm outlined proposed experiments for the attack on the nature of the gene. With a calm fortitude he was prepared to face the inevitable.

Needless to say, many honors came to Stadler. He was a member of the National Academy of Sciences, the American Philosophical Society, the American Academy of Arts and Sciences, as well as a host of others. Among the elective offices he held were president of the Genetics Society of America and national president of the Society of Sigma Xi. But more important than these kudos is the respect and admiration held for him by his fellow-scientists. A great and wise colleague has gone; science has lost a truly eminent man who spoke in a clear and authoritative voice.

M. M. RHOADES

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# News and Notes

## Friends of Pleistocene Geology—17th Reunion

The 17th reunion of the Friends of Pleistocene Geology was held in Wellsboro, Pa., on 22–23 May. About 100 persons attended, coming from Ontario, Maine, Michigan, Maryland, and intermediate points. In addition to Pleistocene geologists, the group included soil scientists, foresters, botanists, and archeologists. A field excursion in connection with the reunion was conducted jointly by W. H. Lyford, soil scientist with the Soil Conservation Service, U.S. Department of Agriculture, and the writer. We are carrying on a collaborative field study of the soils and the Wisconsin and pre-Wisconsin drifts in an area that extends roughly north from the latitude of Williamsport, Pa., to that of Ithaca, N.Y., and west from the longitude of Binghamton, N.Y., to that of Wellsboro.

The field excursion was devoted to three major problems. The first was a study of the lithology, stratigraphy, and topographic expression of early Wisconsin drifts, the "Olean" and "Binghamton" drifts of local usage [P. MacClintock and E. T. Apfel, *Bull. Geol. Soc. Amer.* 55, 1143 (1944)]. The second objective was an examination of the soils developed on these deposits. And finally, the excursion attempted to demonstrate that the "Olean" and "Binghamton" drifts have been modified by periglacial processes, chiefly mass movements, and that such modification took place in large part prior to the retreat of a "post-Binghamton" ice sheet, the "Valley Heads" of local usage [H. L. Fairchild, *Bull. Geol. Soc. Amer.* 43, 627 (1932)]. A tentative correlation of these drifts with the drifts of central United States is as follows:

| *Local name* | *Possible correlative in central United States* |
|---|---|
| "Valley Heads" drift | Cary substage |
| "Binghamton" drift | Tazewell substage |
| "Olean" drift | Iowan and/or Tazewell substages |

C. S. DENNY

*U.S. Geological Survey, Washington 25, D.C.*

## U.S. Geological Survey's Paleontology and Stratigraphy Branch

The current program of the U.S. Geological Survey's Paleontology and Stratigraphy Branch was reviewed by its scientific staff during 3 days of meetings at the U.S. National Museum in Washington, D.C., 19–21 Apr. The purpose of these meetings was to outline and appraise the program in terms of individual project objectives, research methods, and progress. More than 40 speakers from the branch's three laboratory centers described their work in the course of five sessions. Nine visiting observers attended the meetings and led the discussion in a sixth and final appraisal session. Colleagues from the Washington area responded to a general invitation to attend. Many unscheduled conferences grew out of the scheduled but informal meetings.

The first session reviewed progress with paleotec-

tonic map and geologic lexicon compilation. Work on Jurassic paleotectonic maps has progressed to the point of final drafting and has revealed facies and thickness trends of substantial interpretive and economic interest. Additional maps are planned that will eventually cover the entire geologic column for the United States. Laboratory sedimentation studies and supplementary field investigations are being undertaken in connection with the paleotectonic map work. The preparation of a check list of new geologic names and usages in North America since 1935 is also well advanced. It is intended to follow this with the preparation of supplements to the Survey's *Lexicon of Geologic Names of the United States,* which will eventually bring the record up to date in the same degree of detail that was provided in the original work by Wilmarth.

Discussion of other phases of the branch's work was organized in terms of principal functional units, although most activities somewhere overlap the intentionally flexible unit boundaries. Members of the lower Paleozoic unit are preparing monographic syntheses on trilobites, ostracods, and bryozoans, and they are conducting stratigraphic and paleoecologic studies of lower Paleozoic rocks of New England, the Great Basin and Pacific Coast, and the subsurface of the Williston basin. The staff of the upper Paleozoic unit is working on summary studies of the ranges and relationships of corals, bryozoans, gastropods, ostracods, conodonts, cephalopods, and fusulinids. They are also investigating stratigraphic and paleoecologic problems in the upper Paleozoic rocks of the mid-continent region, the Rocky Mountains, the Great Basin, Alaska, and the subsurface of the Williston basin.

Paleontologists of the Mesozoic unit are concentrating on the molluscan faunas and stratigraphy of the Mesozoic rocks of the western interior and Alaska, the Triassic faunas and stratigraphy of Nevada and California, the Cretaceous faunas and stratigraphy of the Gulf Coast, and a critical summation of the North American *Orbitolinas*. The Cenozoic staff is concerned with studies of mollusks, echinoderms, and Foraminifera of the coastal parts of the United States and the Caribbean region, and with the stratigraphy and paleontology of the insular western Pacific. Current studies of vertebrate paleontology and paleobotany are mainly concerned with the morphology, paleoecology, and stratigraphic ranges of Cenozoic mammals of the Rocky Mountain region and the Mojave Desert, late Paleozoic floras of the mid-continent region, Tertiary floras and diatoms of the western United States, and algae through time. It is hoped soon to initiate research on pollen and spores, wood, and nonmarine mollusks.

A prominent part of the branch program involves the study of material referred for examination by other units of the Geological Survey. Although the primary aim of this work is to answer specific questions formulated by others, it is also a fruitful source of material and ideas leading to new basic studies and discoveries. Collaborative work is not restricted to Survey units—current biogeochemical investigations involve the collaboration of five non-Federal institutions, and studies of a new Tertiary nonmarine arthropod fauna have called on the talents of a wide selection of entomologists and an arachnologist.

The research that keeps the staff of the branch prepared to meet a variety of calls for special aid or collaborative investigations is aimed toward supplementing continued advance along conventional fronts with development of new fields and approaches. It is of four principal types: (i) monographic studies of the structure, biologic organization, life associations, and ranges in time of large or significant groups of fossils; (ii) stratigraphic and paleoecologic investigations of particular rock sequences, community associations, or areas, including comparisons with areas or fields beyond immediate fields of study; (iii) continuing morphologic and stratigraphic analyses of inadequately known but potentially important groups of organisms, such as the air-borne and planktonic forms that may attain wide distribution in brief time intervals, cross facies boundaries, and be well-adapted to quantitative methods of analysis; and (iv) studies leading to the preparation of regional field handbooks that will present selected suites of distinctive fossils in stratigraphic context. Critical evaluation of analytic procedures and methods of presentation of data and conclusions is encouraged in connection with efforts toward the objectives mentioned, but not as an end in itself.

At the conclusion of the sessions, invited critics expressed the hope that more monographic syntheses would be forthcoming as recessed and new work gathered momentum. The great diversity of activity drew special comment. It is anticipated that the published results of work in progress will demonstrate that this diversity reflects a coming to grips with varied and basic problems.

PRESTON E. CLOUD, JR.
*U.S. Geological Survey, Washington 25, D.C.*

## Science News

In a two-part article on "**U.S. Science: The Troubled Quest**" in the *Reporter* magazine for 14 and 23 Sept., Theodore H. White, after illustrating the importance of government money to scientific research and saying that American scientists are disturbed by some of the political aspects of government contributions, outlines the background that men must consider if they wish to understand the reasons scientists are disturbed.

> First, there is the background of science itself, the quest for pure knowledge in whose long trail they [the scientists] find themselves at the moment in a jungle of preposterous puzzles. Second, there is the background of America's curious scientific community, so different and so changed from its own past and from any other in the world.

In considering the first aspect of the background, the author describes in general terms the "puzzles"

faced by physicists and biologists, and notes the high cost of investigation. As for the second aspect, he discusses the changed nature of American science (from penury to abundance) and presents some details about the decline of science instruction in the schools from which future scientists must come.

In the second part of this article White describes how the bringing of scientists into national defense questions, not merely as weapons technologists, but as developers of a new system, has brought about the political and security problems that now disturb them.

The wide and effective application of **growth regulators** during the past decade, particularly in the field of chemical weed control, has stimulated the interests of plant physiologists and biochemists in the fundamental mechanism of growth regulation. Although a number of chemicals act as growth regulators, 2,4-dichlorophenoxyacetic acid (2,4-D) is by far the most effective. Several responses of plants comparable to those produced by 2,4-D are induced by the naturally occurring hormone or auxin, indolacetic acid (IAA). The effects of these two substances on oat and sunflower tissues are discussed by J. H. M. Henderson, I. H. Miller, and D. C. Deese in a paper scheduled for a forthcoming issue of *Science*.

A method used by the ancient Romans to **purify water**, that of dropping bars of silver into aqueducts, may be adopted by American industries to sterilize water. A Pittsburgh company carried out tests of purification processes based on the use of silver salts. Harmful bacteria are speedily killed by "bullets" of silver released into the water by the new method called the hyla process. Water purified by this process is not only free from bacteria but also it has no taste or smell. The process has gained wide acceptance in Europe, and the United States Public Health Service says water with less than one part of silver to a million parts of water is safe. Tests at Johns Hopkins University proved that hyla-treated water had only seven to a billion parts of silver.

The total **synthesis of strychnine** is reported in the 20 Sept. issue of the *Journal of the American Chemical Society* by a team of Harvard University chemists led by R. B. Woodward, Morris Loeb professor of chemistry. Working with Woodward were Michael Cava, A. Hunger, W. D. Ollis, H. U. Daeniker, and K. Schenker, all of whom were or are postdoctoral fellows in the Converse Memorial Laboratory.

Since the medical demand for strychnine is easily met from the natural product, the discovery has no practical value, but it contributes to man's understanding of natural processes. One of the first alkaloid substances to be isolated in pure state (by Pelletier and Caventou in 1818), strychnine has long presented a challenging problem to chemists. It is one of the most complicated of the ordinary-sized molecules occurring in nature, and its synthesis is a more involved one than Woodward's earlier achievements with quinine and cortisone. The strychnine molecule is an intricate web of 21 carbon atoms, 22 hydrogen atoms, and 2 each of nitrogen and oxygen. The process that led to the reconstruction of the molecule was completed in 3 yr; 1 yr was devoted to preliminary studies and 2 yr to detailed laboratory work. The synthesis as completed takes 30 laboratory steps.

The World Health Organization has taken the opportunity offered by the 10th anniversary of the advent of penicillin therapy and the centenary of Paul Ehrlich, discoverer of chemotherapy, to review the development of **syphilis treatment methods.** A recent issue of the *Bulletin of the World Health Organization* is devoted exclusively to the study of this question. Although syphilis has become much less serious in some countries in the last decade, it continues to be an important public health problem in many others. WHO, in fact, estimates that there are about 20 million syphilities in the world today and that in some special areas in certain countries up to 80 percent of the population may be afflicted.

Penicillin is considered a fully effective, nontoxic and relatively inexpensive remedy; a single injection will cure a patient in from 10 to 15 days at a cost of between 93 ct and $1.40. WHO's appraisal of treatment practices, carried out in 55 countries 10 yr after the initiation of the use of penicillin, shows the extent to which penicillin therapy has replaced the classic metal chemotherapy (bismuth, arsenic, mercury). A total of 65.3 percent of the clinics covered by the survey use penicillin without adjuvant therapy; 28.9 percent use penicillin combined with other drugs, and 5.8 percent use metal chemotherapy without penicillin. All the North-American clinics and 52.2 percent of the European ones use penicillin alone.

An article by Niels C. Beck in *Frontier*, a publication of the Armour Research Foundation of Illinois Institute of Technology, comments on the tendency of people to seek obscure reasons for purely natural phenomena. The following extract regarding the recent **pitted windshield epidemic** was included.

> . . . During the pitted windshield epidemic, Foundation scientists examined about 25 samples of shattered and pitted windshields submitted for analysis by Chicago area motorists.
>
> The marks in nearly every case were found to be similar and several months old. . . . "There was no evidence that the damage resulted from radio-activity, cosmic rays, or air rifles. Gravel, dirt, or stones probably thrown up by other cars accounted for the damage in all cases," they said.

The second issue in June of *Naturwissenschaften* (**41**, 269) carries an article on **nuclear reactors** by K. Wirtz of Göttingen that considers the legal, economic, and technical situations to be met in West Germany after other nations have already developed atomic fuel. West Germany is allowed to construct a reactor with 1500 kw maximum power, or to design several reactors with a total power of 1500 kw. No more than

500 g/yr of plutonium may be produced. The western sector has the right either to produce or to import 30 tons of uranium if the reactor should actually require this amount; then, in the following years, nine tons per year can be used. Eighteen tons of uranium may be stored. West Germany has two uranium deposits but no particularly rich ore, the average concentration being 0.2 percent. As far as is known now, West Germany does not have enough uranium deposits to develop the uranium or nuclear reactor industries independently—that is, without importing.

After this brief introduction to the problems of developing nuclear reactors in Germany, the article discusses various reactors in some detail. There is an excellent summary (in tables and graphs) of the properties of nuclear reactors as far as they are known to the public. This paper will be quite useful for the teacher who wants to introduce senior and beginning graduate students to nuclear technology.

Wirtz also discussed reactors and their future as power sources in Germany at the 84th annual meeting of the Society of German Engineers (V.D.I.) in Mannheim [*Physikalische Blätter* **10**, 324 (1954)].—K. L. H.

On 15 Sept. the Army confirmed the reinstatement of Allan G. Weisner of Asbury Park, N.J., who was suspended for security reasons from the **radar center at Fort Monmouth,** N.J. Weisner is the eighth of the 22 suspended workers to be reinstated. Four have been dismissed and the other 10 cases are awaiting final decisions.

One of the significant papers presented at the heart-surgery session of the recent World Congress of Cardiology was that of James P. Grace describing **bloodless heart operations** on dogs during cessation of heart-beat and breathing at low body temperature—below 10°C. Grace heads a four-man team at Nashville, Tenn., that performed this operation on 13 dogs, all of which survived the operations though four died of postoperative complications. During the operation circulation outside the heart was maintained by shunting the blood through a simple apparatus that both supplied it with oxygen and cooled it. After about 30 min of heart stoppage, rewarming the blood restored normal heart and lung functions. Heart-beat began again at 15.1°C.

Arnold H. Sparrow and Lloyd A. Schairer of the Brookhaven National Laboratory, Upton, N.Y., have reported the first positive proof that atomic radiation can cause **tumors in plants.** Scientists have known for several years that atomic rays or particles, as well as x-rays, can cause tumors in human beings and they have suspected that this was also true for plant life.

Sparrow and Schairer exposed tobacco plants to gamma rays given off by cobalt-60. This particular type of tobacco plant normally produces nonfatal tumors as it grows. However, when bombarded by atomic rays the plants became covered with a green-gray tumor mass, withered, and died within a few weeks. The continued study of the effects of atomic radiation on plant cells may provide information about all cancerous growths.

The **Soviet Union** announced on 17 Sept. that it had exploded another atomic weapon. The Government newspaper *Izvestia* said: "In accordance with the plan of scientific research work, trials of one of a type of atomic weapons were carried out. . . . The trials produced valuable results, which will enable Soviet scientists and engineers to solve successfully problems of defense from atomic attack." In August the Russians conducted tests involving both fission and thermonuclear explosions.

**Damage to 35 mm negatives** from scratches, dust, or fingerprints can now be corrected by using a newly developed liquid in a specially devised film holder, or carrier, attached to the photographic enlarger. The discovery and invention stem from experiments by C. Guy Suits, vice president of General Electric Co. and director of research. Commercial production problems are being solved, and both film-holder (Refractamatic 35, designed by Simmon Bros., Inc., Long Island City, N.Y.) and the liquid (Refractasil, a product of the G.E. silicone products department at Waterford, N.Y.) are expected to be on the market in a few months.

In view of a recent federal court order in Maine regarding the Wilhelm Reich Foundation and its claims for **orgone treatment,** a summary of Reich's activities may be of interest.

Wilhelm Reich's early work in psychoanalysis in Austria and Germany was generally accepted by psychoanalysts as an important contribution. His collected papers on character formation, published in book form in 1933, were considered a pioneer clinical study of both ego psychology and the techniques of character analysis. But Reich's concepts seemed to change suddenly. In his paper read at the International Psychoanalytic Congress in 1934 he described character as biophysical behavior, to which he applied his orgasm theory. That same year, according to the translator's preface to the second edition of *Character Analysis,* Reich was excluded from the International Psychoanalytic Association, allegedly because "he had become too well known as an anti-fascist."

He went to Norway, where he claimed discovery between 1936 and 1939 of "a visible . . . ubiquitous cosmic energy," and began to publish a magazine on sexual economics. About 1940 he came to this country.

The Wilhelm Reich Foundation was established at Orgonon, Rangeley, Maine. Here Reich concentrated on "Orgone biophysics and . . . orgone therapy." The orgone energy accumulator, equipped with shooter, was made, which was represented to collect, accumulate, and use *'Life Eenergy* . . . for scientific, educational and medical purposes.'" As pictured, the device looks like a telephone booth. An orgone energy blanket was made for bed patients. Use of either device was claimed to greatly benefit the patient with various diseases, from cancer, brain tumor, and severe sexual stasis, to colds or hay fever.

Although supposedly self-regulating, treatment and its results could be judged only by use of Reich blood tests and by "authorities in the field of orgonomy." Individuals were allowed to use the device in their own homes by contributing a monthly fee "to the Orgone Research Fund." For some time leading psychiatrists in this country have felt that evidence brought forward in favor of the so-called orgone theory is unconvincing, and that orgone treatment is scientifically unsound.

By a decree of injunction . . . the defendants [the foundation, Wilhelm Reich, and Ilse Ollendorff] and all their associates were "perpetually enjoyed and restrained from doing any of the following acts, directly or indirectly," in violating certain sections of the Act, "with respect to any orgone energy accumulator device, in any style or model, any and all accessories . . . purported and represented to collect and accumulate the alleged orgone energy."

The decree further ordered the defendants to recall all such devices shipped on a rental or similar basis in interstate commerce and to destroy or dismantle them; to withhold all publications discribing these devices or their use or to delete all such passages; to destroy all printed or written instructions regarding the devices and their use; to stop further dissemination of all this material; and to permit employees of the Food and Drug Administration to have access to pertinent files and records and to interview officers or employees of any defendant.

## Scientists in the News

**P. A. M. Dirac,** Lucasian professor of mathematics at Cambridge University, England, and 1933 Nobel prize winner in physics, has been granted a visa to visit the United States. Last May his application for entry to this country to spend the academic year at the Institute for Advanced Study, Princeton, N.J., was denied [*Science* **119**, 829 (11 June)], although he had previously visited the institute a number of times. Dirac is one of seven well-known physicists with whom the institute has made arrangements for a continuing or recurrent association. He is expected to arrive in Princeton next April. During his trip he will also visit Canada, Japan, and India.

Another physicist who has had difficulties entering the United States, but who has now been granted special permission to visit, is the atomic scientist **M. L. E. Oliphant,** professor of physics at Australia's National University, Canberra. Oliphant has cancelled his proposed trip, however, and is not expected to take advantage of his transit permit. In 1951, administrative delays in passing on his visa application prevented Oliphant from attending an international conference of nuclear scientists in Chicago. At least 50 foreign scientists, including Nobel prize winners in fields other than physics, have been refused visas in the last 2 yr.

**Karl Bowman,** professor of psychiatry in the University of California School of Medicine, San Francisco, and supervisor of the Langley Porter Clinic, leaves in October for Manila where he will set up a program in psychiatry in the Medical School of the University of the Philippines. During a stay of nearly 6 mo, Bowman will serve as a visiting professor. He will select one of two Filipino doctors to be sent to the School of Medicine in San Francisco for training in psychiatry. These doctors will then carry on the program Bowman establishes.

Before returning to the U.S., Bowman will spend some time at the University of Indonesia in Djakarta. There he will also advise on a psychiatry program and select men for training in California. Bowman's mission is being supported by the China Medical Board, an agency of the Rockefeller Foundation.

**Sir Alexander Fleming,** the 73-year-old discoverer of penicillin, has announced that he will relinquish his administrative duties as chief of the Wright-Fleming Institute of Microbiology on 31 Dec. to give his full time to research.

**Merril Eisenbud,** a member of the Atomic Energy Commission's New York Operations Office staff since 1947 and director of the office's health and safety laboratory since 1949, has been appointed manager of the New York Operations Office. He will continue as associate professor of industrial medicine in the Post-Graduate School of Medicine at New York University.

**Robert S. Woodworth,** professor emeritus at Columbia University, who for half a century has been one of the leading figures in American psychology, was honored recently by 160 professional colleagues at an advance celebration of his 85th birthday. Although he retired in 1942, Woodworth still teaches a course in dynamic psychology, which deals with the causes of human behavior, a field in which he is regarded as a pioneer. He is also working on another book on the same subject.

The following scientists were honored at the 126th national meeting of the American Chemical Society.

**Paul Delahay** of Louisiana State University, ACS award in pure chemistry. Delahay is recognized internationally as one of the outstanding men in electrochemistry and has made substantial contributions to polarography.

**Henry Taube** of the University of Chicago, ACS award for nuclear applications in chemistry. Taube is the first recipient of this award, which is sponsored by the Nuclear Instrument and Chemical Corp. The award is based on his investigations of oxidation-reduction and substitution reactions in aqueous solutions.

**R. Bowling Barnes** of Olympic Development Co., Beckman award in chemical instrumentation. Barnes was honored for his pioneering work in applications of infrared spectrometry; he was the first to utilize infrared spectroscopy in the qualitative and quantitative analysis of organic molecules.

**Fred Hillig** of the U.S. Food and Drug Administration, Borden award in the chemistry of milk. Hillig was nominated for this award on the basis of his re-

search in the chemistry of milk and his identification of products of deterioration in milk.

**William F. Neuman** of the University of Rochester, Eli Lilly and Co. award in biological chemistry. Neuman has made significant studies of bone metabolism and formation.

**Ernest H. Swift** of California Institute of Technology, Fisher award in analytical chemistry. Swift is credited with development of an original system of analysis that provides a combination of qualitative and quantitative methods.

**Hans Schinz** of Federal Institute of Technology, Zurich, Switzerland, Fritzsche award. Schinz was selected because of his outstanding work in the chemistry of essential oils and aromatics. He has added extensively both to the scientific literature and the literature of the perfumery field.

**Grace Medes** of Lankenau Hospital Research Institute, Garvan medal. Medes is noted for her contributions to various phases of physiological chemistry.

**John W. Williams** of the University of Wisconsin, the Kendall Co. award in colloid chemistry. Williams was first among those who applied techniques of physical chemistry and dipole moments to solving problems of colloid chemistry.

**Paul D. Boyer** of the University of Minnesota, Paul-Lewis Laboratories award in enzyme chemistry. Boyer has concentrated on problems of oxidation-reduction of biologically important compounds and on enzyme chemistry, particularly the mechanism of enzyme reactions.

**Frank G. Ciapetta** of Socony-Vacuum Oil Co., Precision Scientific Co. award in petroleum chemistry. Ciapetta is noted for his investigations in development of new processes for producton of motor and aviation gasolines.

**Gerrit Van Zyl** of Hope College, Scientific Apparatus Makers award in chemical education for 1955. Van Zyl is credited with the undergraduate training of 68 students who later became Ph.D.'s, out of 198 chemistry majors.

Two new research associates have joined the staff of the General Electric Research Laboratory, Schenectady, N.Y. They are **Jack Kwiatek,** formerly a research chemist for the M. W. Kellog Co., and **R. L. Kyhl,** a specialist in microwave spectroscopy, microwave circuits, and particle acceleration who has been engaged in research at Stanford University.

**A. Langseth,** head of the chemistry department, University of Copenhagen, is visiting the division of physics spectroscopy laboratory of the National Research Council of Canada for several months. He is well known for his work in Raman spectroscopy.

**Jean-Claude and Charlotte Pecker,** French astrophysicists who have spent the past year on the staff of the High Altitude Observatory at Boulder, Colo., have just returned to France where Dr. Pecker will teach and carry on research at Clermont-Ferrand University. During the year here, he studied the origin of corpuscular streams from the sun, the temperature-height distribution of temperature and pressures in the chromosphere, and the dynamics of prominence motions. Mrs. Pecker worked on the identification of the yellow coronal emission line. Her work suggests that the atomic weight of the responsible atom is about 40. **Gerard Wlérick** of the Paris Observatory will join the High Altitude Observatory staff in November for a year's stay.

At the recent International Mathematics Congress in Amsterdam a French mathematician, **Jean-Pierre Serré,** and a Japanese professor who is a member of Princeton University's department of mathematics, **Kunihiko Kodaira** of Toyko, received the Field medal. The award is one of the highest in mathematics and carries with it a $1500 prize.

A student loan fund exclusively for needy doctoral candidates in zoology is being established at the University of Illinois in honor of the late **Prof. Harley J. Van Cleave,** eminent zoologist and member of the faculty from 1911 until his death in 1953.

**Herbert Q. Smith** has joined the staff of the research department of Reed and Carnrick, Jersey City, N.J., where he will work on the syntheses of new chemotherapeutic substances. Smith has previously conducted research at the Schering Corp. and at Lemke Co.

**Willard R. Cooke,** professor of obstetrics and gynecology and chairman of the department at the University of Texas Medical Branch, Galveston, since 1924, has asked to be relieved of administrative responsibilities so that he may devote himself fully to teaching, research, and hospital practice. He plans special work in the gynecologic aspects of cancer. **Garth L. Jarvis** will be chairman of the department.

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.

J. C. Batten, Medical Research Council, 38 Old Queen St., London. Here for 1 yr beginning 5 Oct. on the Medical Research Council's Dorothy Temple Cross traveling fellowship. Will work under Walsh McDermott in the department of medicine at Cornell Medical Center, New York.

Louis Houpert, director, Dental School, Nancy France. Arrived 17 Sept. for 90 days.

Shawkat Kanawati, dean, School of Medicine; vice president, Syrian University, Damascus, Syria. Arrived 10 Sept. for 90 days.

Heinrich G. Kipp, adviser on scientific matters, Federal Ministry of the Interior, Bonn, Germany. Arrived 10 Sept. for 60 days.

R. H. Kirby, Colonial Products Laboratory, London. Will be in North America 7–10 Nov.

F. Mandl, U.K. Atomic Energy Authority, London. Arrived in September for 1 yr at the University of Rochester.

R. N. Parkins, department of metallurgy, University of Durham, England. Arrived late September to attend Electrochemical Society symposium on stress-cracking phenomena in Boston, 3–7 Oct. Plans to visit various laboratories and to give lectures.

J. T. Randall, honorary director, Medical Research Council Biophysics Research Unit, London. Here 8 Oct.–10 Nov. to attend the Eli Lilly conference on connective tissues in Indianapolis and to make a few visits.

Eckart Seemann, chief, City Health Department, Kempten, Germany. Arrived 17 Sept. for 60 days.

K. Tansley (Mrs. Lythgoe), Medical Research Council, London. Here 9 Sept.–13 Oct. to attend the International Congress of Ophthalmology in Montreal and New York.

Hans-Joachim von Brandis, chief surgeon, Stade City Hospital, Germany. Arrived 10 Sept. for 60 days.

The following appointments to assistant professor have been announced. Stanford University: **Stanley Davis,** engineering geology; **A. Joe Scull,** pediatrics. Moravian College: **Albert E. H. Gaumer,** biology. University of Oklahoma: **Duane H. D. Roller,** history of science and technology.

## Meetings

Scientific methods to detect mixing of cheap fats and oils with butter fat will be a major consideration at the 68th annual meeting of the **Association of Official Agricultural Chemists** which will be held at the Shoreham Hotel in Washington, D.C., 11–13 Oct. The A.O.A.C. is the scientific organization that tests laboratory methods used to determine the purity and the safety of foods, drugs, and cosmetics, as well as fertilizers, feeds, and insecticides. The methods of analysis published by the organization are used by officials charged with the enforcement of laws regulating these products. All the sessions are open to interested scientific workers and the public. Detailed information can be obtained by writing to the association, Box 540, Benjamin Franklin Station, Washington 4, D.C.

The 7th annual **Conference on Electrical Techniques in Medicine and Biology** will be held at the Morrison Hotel in Chicago, 10–12 Nov. under the sponsorship of the American Institute of Electrical Engineers, the Institute of Radio Engineers, and the Instrument Society of America. Three sessions devoted to technical papers are scheduled; one on "Circulation and cardiology," one on "Electrical properties of biological materials," and one on "X-rays and instrumentation." At a dinner meeting the guest speaker will be T. E. Allibone, director of research of the Associated Electrical Industries of Great Britain.

Two laboratory field trips have been arranged, to the Argonne Cancer Research Hospital and to the Argonne National Laboratory. Citizens of countries other than the United States must give 3 wk notice through the conference chairman so that admission to the Argonne National Laboratory may be arranged. The chairman is E. D. Trout, 4855 Electric Ave., Milwaukee 1, Wis.

The **American College of Cardiology** will hold its third interim scientific meeting at the Hotel Algiers, Miami Beach, Fla., 11–13 Nov. The meeting will be devoted entirely to a symposium on diet in heart disease made up of four scientific sessions, which will be in the form of panel meetings and round table conferences. Further information may be obtained from the secretary of the college, Dr. Philip Reichert, 140 W. 57 St., New York 19.

The 8th annual midwestern meeting of the **Society of Exploration Geophysicists** will be held 18–19 Nov. at the Adolphus Hotel in Dallas. R. C. Dunlap, Jr., general chairman, has announced that registration will begin 17 Nov. for more than 1000 exploration scientists from Texas, Louisiana, Oklahoma, and New Mexico.

The **National Science Foundation** will award individual grants to defray partial travel expenses for a limited number of scientists who will attend the **International Symposium of the Biometric Society** to be held at Campinas, near São Paulo, Brazil, 4–8 July 1955, or the 29th session of the **International Statistical Institute** to be held in Rio de Janeiro, Brazil, 24 June–2 July 1955. Application blanks may be obtained from the National Science Foundation, Washington 25, D.C. *Completed forms must be submitted by 31 Dec.*

For the first time anywhere, practical aspects of efficiency and cost, along with specific details on installations of many types of air pollution control devices, will be presented at the semiannual technical conference of the national **Air Pollution Control Association** scheduled for 4–6 Nov. in Los Angeles. Industry-wide reports on control of air contaminants, using existing installations as illustrations, have been programmed. Advance registration should be made through Edward S. Feldman, 2155 E. 7 St., Los Angeles 23, Calif.

The 4th annual **Conference of Western Region, National Association of Corrosion Engineers** will be held at Los Angeles, 18–19 Nov. The conference will follow a 3-day, NACE-sponsored course on the theory, surface preparation and application, testing, and preparation of specifications of protective coatings held at the University of California, Los Angeles.

Technical sessions scheduled for the conference will include marine and steel water pipe corrosion problems and the use of concrete and bituminous coatings internally and externally on water piping. J. G. Kerr, C. F. Braun & Co., 1000 S. Fremont Ave., Alhambra, Calif., is registration chairman.

A **Field Emission** symposium will take place in Pittsburgh, 10–12 Nov. Technical sessions will be held at Mellon Institute and headquarters will be at the Webster Hall Hotel. There will be four sessions on field emission proper, one session on voltage breakdown, and one on the chemistry of surfaces. Further information may be obtained from Dr. Ralph Klein, Bureau of Mines, 4800 Forbes St., Pittsburgh 13.

The **International Astronomical Union** will meet in Moscow in 1958, subject to a final decision to be made at the next general assembly of world astronomers in Dublin, 29 Aug–5 Sept. 1955. The international astronomical meeting will be held in the United States in 1961 "if the U.S. government could see its way to meet the essential requirement that all competent astronomers who are members of the International Astronomical Union would be welcome." Recently visas have not been given to some foreign scientists because of the restrictive provisions of the McCarran Act. Otto Struve, University of California astronomer, reported these decisions made at the astronomical meeting held recently in Belgium upon his return to this country.

## Available Grants and Fellowships

Three $4000 postdoctoral **fellowships in statistics** are offered for 1955–56 by the University of Chicago. The purpose of these fellowships, which are open to holders of the doctor's degree or its equivalent in research accomplishment, is to acquaint established research workers in the biological, physical, and social sciences with the role of modern statistical analysis in the planning of experiments and other investigative programs, and in the analysis of empirical data. The development of the field of statistics has been so rapid that most current research falls far short of attainable standards, and these fellowships (which represent the fifth year of a 5-yr program supported by the Rockefeller Foundation) are intended to help reduce this lag by giving statistical training to scientists whose primary interests are in substantive fields rather than in statistics itself. *The closing date for applications is 15 Feb. 1955*; instructions for applying may be obtained from the Committee on Statistics, University of Chicago, Chicago 37.

The New York Academy of Medicine has announced the availability of The Louis Livingston Seaman Fund for the furtherance of research in **bacteriology and sanitary science.** A total of $1900 will be assigned in 1954. This fund, made possible by the terms of the will of the late L. L. Seaman, is administered by a committee of the academy under the following conditions and regulations: (i) the committee will receive applications either from institutions or individuals *until 1 Dec.,* and (ii) the fund will be expended only in grants-in-aid for investigation, or scholarships for research, in bacteriology or sanitary science. The expenditures may be made for securing technical help, aid in publishing original work, and purchase of necessary books or apparatus. Communications should be addressed to Dr. Wilson G. Smillie, Chairman of the Louis Livingston Seaman Fund Committee, 1300 York Ave., New York 21.

The Arctic Institute of North America, 1530 P St. NW, Washington 25, D.C., has prepared a comprehensive 25-page brochure, entitled **"Pressing Scientific Problems of the North,"** to bring to the attention of North American scientists the challenge and the opportunity presented in northern research. The brochure includes the following paragraph:

> Grants-in-aid for meritorious research projects are awarded yearly by the Arctic Institute. Any who have such projects in mind, or who wish to inquire about ways in which their scientific interests may find expression within the institute's program, are urged to get in touch with one of the Institute's offices. . . . In addition, Mr. Joseph T. Flakne, Director of Programming, is making contact with colleges and universities and will be visiting many of these institutions within the next few months. He will be glad to hear from anyone who would be interested in talking with him or who wishes to suggest a visit by him to a particular university. Indeed the Institute will welcome word from any who are interested in helping to further the great task it has undertaken—to accelerate and expand the scientific study of the North that we may more fully and speedily realize its economic, strategic and scientific potentialities.

The trustees of the **Melville Trust Scheme for the Care and Cure of Cancer** (Scotland) invite applications for fellowships in cancer research commencing in April 1955. The initial stipend will be according to experience, but will be not less than £800 per annum; and funds are available for the provision of equipment and for technical assistance. A fellowship is ordinarily awarded for a period of 2 yr, but may be renewed. The research is normally to be carried out in one of the recognized clinical or scientific departments in Edinburgh; and if possible applicants should have made prior contact with the head of the appropriate department; if this is not possible, the trustees will endeavor to make suitable arrangements. The research may deal with any aspect of malignant disease, and candidates need not necessarily hold a medical qualification.

Applications, together with the names of three references, *should be submitted by 31 Oct.* to the Honorary Secretary, Scientific Advisory Committee, The Melville Trust, 26 Moray Place, Edinburgh 3, from whom further particulars may be obtained. The application should be accompanied by an outline of the proposed research, and by an account of any previous scientific or research experience. The expenses incurred by any research fellow appointed from overseas in traveling to the United Kingdom will be defrayed by the Trust, which will also reimburse all candidates who are required to attend for interview.

## Grants and Fellowships Awarded

The clinical branch, **Biological Sciences Division of the Office of Naval Research** has awarded the following research contracts to universities and nonprofit institutions for periods of from 1 to 3 yr.

Bryn Mawr Hospital, Bryn Mawr, Pa. M. M. Strumia. Preservation and sterilization of dried blood plasma and post-transfusion hepatitis studies.

Johns Hopkins University. G. S. Mirick. Infectious hepatitis and homologous serum jaundice.

State University of New York. A. A. Siebens and K. E. Karlson. Physiology of pulmonary function following lung resection.

University of Rochester. J. U. Schlegel. Sodium retention following shock.

Yale University. M. B. Hayes. Functional endocrinologic interrelations operating in metabolic response of man to trauma.

Tufts College. O. Swenson. Neurogenic bladder.

Medical College of South Carolina. R. F. Hagerty. Survival of transplanted human, living homologous cartilage grafts.

State University of New York. E. P. Mannix. Methods for the treatment of thoracic trauma.

University of California, Los Angeles. S. M. Mellinkoff. Amino acid tolerance in liver disease.

Burke Research Co. O. W. Burke. Glycerol pectate as a plasma expander.

Duke University. N. G. Georgiade. Preservation of human skin.

Columbia University. A. H. Blakemore. Experimental evaluation of plastic textile tubes in bridging arterial defects under varying conditions.

George Washington University. B. Blades. Control of pain.

The **Sister Elizabeth Kenny Foundation** has announced a grant of $90,000 to **New York University–Bellevue Medical Center** for the study of neuromuscular diseases, including poliomyelitis. The program will be carried out in three hospitals under the direction of Thomas I. Hoen, chairman of the department of neurosurgery, and Walter A. L. Thompson, chairman of the department of orthopedic surgery, both of N.Y.U. Post-Graduate Medical School; and Robert Ward, professor of pediatrics in N.Y.U. College of Medicine. Approximately 90 percent of the work will be done in Bellevue Hospital. Other participating hospitals will be N.Y.U.'s University Hospital and New York State's Central Islip Hospital. Under this grant, the new wards for the treatment of poliomyelitis will be supervised by Marvin A. Stevens, eastern area medical director for the Kenny Foundation, and staffed by Kenny-trained therapists.

Since 1 Jan. grants totaling $43,100 for research and clinical studies have been made by **Sharp and Dohme** to hospitals, colleges, and universities.

## In the Laboratories

The engineering division of the **Vitro Corp. of America** is designing and engineering a biological laboratory for the Chemical Corps of the U.S. Army at Camp Detrick, Frederick, Md. The new laboratory with its related facilities and auxiliaries, including cooling tower, air incineration system, sewers, and roads, will probably cost about $4,000,000.

A new $150,000 dust-proof and air-conditioned control laboratory has been completed and put into operation at **American Potash and Chemical Corp.'s** main plant at Trona, Calif. The two-story structure, measuring 60 ft long and 40 ft wide, is an all-metal windowless building. It is to be used for the testing of chemical solutions before, during, and after their processing at the production plant. Approximately 60,000 tests are conducted per month.

Testing begins with brine pumped from beneath the surface of dry Searles Lake, source of the company's raw materials. From this brine, 21 chemicals are produced.

The Air Force has granted authority to Ohio State University's radiographic laboratory to perform **x-ray radiography** of materials to be used in conjunction with Air Force and Bureau of Aeronautics contracts. The laboratory has 75- and 220-kv x-ray machines, and is prepared to use cobalt-60 for radiographic inspection. In October installation of a 400-kv machine will be completed. The radiographic equipment is available for limited industrial use by arrangement with the university's Engineering Experiment Station.

A group of New England electric companies has agreed to form a corporation, to be known as the **Yankee Atomic Co.**, for generating atomic energy. The participating companies produce about 90 percent of the electric power in the region. William Webster, executive vice president of the New England Electric System, is president of the new firm.

On 14 Sept. President Eisenhower dedicated the new radio research laboratories of the **National Bureau of Standards** in Boulder, Colo.

## Necrology

**Ashton B. Cooper,** 70, president of Ferranti Electric, Ltd., Toronto, Canada, 15 Sept.; **Norman C. Fassett,** 54, authority on plant life and former professor of biology at the University of Wisconsin, Madison, Wis., 14 Sept.; **Thomas C. McFarland,** 61, author and professor of electrical engineering at the University of California, Berkeley, Calif., 16 Sept.; **Vlades Naigus,** 75, archeologist and former curator of the Lithuanian National Museum, Cleveland, Ohio, 15 Sept.; **Oscar W. Peterson,** 63, former research chemist with E. I. du Pont de Nemours and Co., Perth Amboy, N.J., 18 Sept.; **Daniel G. Revell,** 86, emeritus professor of anatomy at the University of Alberta, Edmonton, Alberta, Canada, 25 Aug.; **Wilbur Ward,** 75, past president of the New York Obstetrical Society and former professor of gynecology at the College of Physicians and Surgeons, Columbia University, New York, N.Y., 20 Sept.; **Stanley Yocom,** 74, retired chief of architecture and engineering of the Philadelphia Board of Public Education, Philadelphia, Pa., 19 Sept.