2. Speedy extension of each state's forest fire prevention and control system to include all forest lands needing systematic protection.

3. Promotion of comprehensive economic surveys to provide for land-use zoning to designate areas best suited to agricultural development, private forestry and public forests.

4. Development of a coordinated system of publicly owned forests, national, state and local, to be used for timber production, demonstration of improved timber growing and fire control methods, wild life conservation, public hunting grounds and recreation.

5. Equalization of taxes so that forest property will not carry a greater burden, in proportion to its value, than do other classes of property.

6. State-wide assistance to landowners in the handling of their forestry problems.

7. Encouragement of reforestation of idle and eroding lands by maintaining state forest tree nurseries to provide suitable planting stock.

8. Extension of investigations by federal forest experiment stations and suitable state research agencies upon the various subjects fundamental to economic handling of forest lands.

9. Speedy extension to the entire southeast of a survey inaugurated under the McNary-McSweeney Act to supply information now woefully lacking as to the present quantity and condition of standing timber, its rate of growth and rate of depletion and market demands for the several types of timber.

10. Recognition by the Federal Government of landowners engaged in the practice of forestry as eligible for the same loans, assistance, grants and privileges as are accorded to the producers of other crops that spring from the soil.

THE WISCONSIN ALUMNI RESEARCH FOUNDATION

A PATENT on another important scientific discovery which will aid in the restoration and protection of health has been assigned to the Wisconsin Alumni Research foundation at the University of Wisconsin, according to an announcement made by Dr. Harry L. Russell, director of the foundation.

A broad basic patent on inorganic compounds of iron and copper for the prevention and treatment of anemia has been granted to Professor Edwin Bret Hart, of the department of agricultural chemistry, University of Wisconsin, and has been assigned to the foundation, becoming one of a number of health-giving discoveries controlled by the foundation in the interests of public welfare. Among the most important of these discoveries is Professor Harry D. Steenbock's process for imparting the health-giving vitamin D properties to food.

The latest patent assigned to the foundation covers various aspects of Professor Hart's discovery of the effect which copper has on unlocking the therapeutic powers of iron in restoring proper hemoglobin content to the blood of anemia patients. Professor Hart made his discovery in 1928 after three years of research and the patent application has been pending since that time.

The foundation has obtained patent control of the discovery, Dr. Russell explained, in order to insure the therapeutic presentation of the compounds in accord with the proper formula. This control is gained through a system of granting licenses for the use of the discovery and other patented articles, and thus the foundation is able to make available these discoveries to the public, while at the same time protecting the public from fraudulent and unchecked exploitation of uncontrolled commercial use.

Professor Hart's experiments showed that iron, long accepted as beneficial in some cases of anemia, required the addition of copper as a catalytic agent, and that "iron" which proved actively useful in treatment of anemias contained traces of copper as a contaminant. The research was narrowed to a study of inorganic materials when vegetable and animal tissues were burned to an ash before being fed and the catalytic properties were found to persist. The blue appearance of such ash led to successful experiments with copper.

Rabbits, chicks and rats developed severe anemia when placed on an exclusive diet of milk, a food naturally deficient in copper, but they evidenced rapid hemoblogin improvement to normal when minute quantities of copper were introduced in their foods.

In application to a hundred cases of secondary anemia in children, it was found in a New York hospital that the administration of copper and iron together increased the hemoglobin content from 64 per cent. to 84 per cent. in four weeks. The red blood cells gained in numbers accordingly. The appetite of the children treated improved materially, and they gained in alertness, weight and color. The copper-iron preparation was mixed with their milk or other foods which it was found neither to discolor nor to alter in taste.

THE PACIFIC DIVISION OF THE AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE

BY invitation of the University of Utah, the seventeenth annual meeting of the Pacific Division of the American Association for the Advancement of Science and associated societies will be held in Salt Lake City. The period June 12 to 15, 1933, has been approved for the meeting. Up to the present time the following societies have announced their intention to participate:

American Association of Economic Entomologists, Pacific Slope Branch. *Chairman,* Program Committee: G. I. Reeves, University of Utah, Salt Lake City.

American Chemical Society, Pacific Intersectional Division. *Chairman,* Program Committee: C. R. Kinney, University of Utah, Salt Lake City.

American Physical Society. Local Secretary for the Pacific Coast: Leonard B. Loeb, University of California, Berkeley.

American Phytopathological Society, Pacific Division. *Secretary:* B. A. Rudolph, Route 1, Box 232, San Jose.

American Society of Ichthyologists and Herpetologists, Western Division. *Secretary:* L. E. Griffin, Reed College, Portland, Oregon.

Astronomical Society of the Pacific. *Secretary:* C. H. Adams, 506 Merchants Exchange Building, San Francisco.

Botanical Society of the Pacific, Pacific Section. *Secretary:* George R. Hill, American Smelting and Refining Company, Salt Lake City.

California Academy of Sciences. *Secretary:* Susie M. Peers, Golden Gate Park, San Francisco.

San Francisco Aquarium Society. *Secretary:* Mrs. Ethel Seale, Steinhart Aquarium, Golden Gate Park, San Francisco.

Society of American Foresters, California and North Pacific Sections. *Secretary:* H. L. Person, University of California, Berkeley.

Society for Experimental Biology and Medicine. *Secretary:* M. L. Tainter, Stanford Medical School, San Francisco.

Utah Academy of Sciences. *Secretary:* Vasco M. Tanner, Brigham Young University, Provo.

Western Society of Naturalists. *Secretary:* E. G. Moberg, The Scripps Institution, La Jolla, California.

Western Society of Soil Science. *Secretary:* E. E. Thomas, Citrus Experiment Station, Riverside, California.

Members wishing to present papers before any of the scientific sessions are asked to submit the titles of their communications to the secretary or program chairman of the appropriate society. Alternatively, titles may be sent to the office of the Pacific Division. Members of non-participating societies desiring to present papers are cordially invited to do so. A title submitted to any of the above will be placed upon the program of the society most suitable to receive it.

A preliminary announcement containing general information about the meeting will be distributed late in March. The program containing titles of all communications will be mailed about June 1.

SCIENTIFIC NOTES AND NEWS

DR. H. SPENCER JONES, astronomer at the Cape of Good Hope Observatory, has been appointed astronomer royal at the Royal Observatory, Greenwich, in succession to Sir Frank Dyson, who on reaching the age of sixty-five years will retire from the public service on February 28. Dr. Jones was chief assistant at the Greenwich Observatory from 1913 to 1923.

DR. PAUL D. FOOTE, director of research of the Gulf Oil Companies and lecturer at the University of Pittsburgh, was elected president of the American Physical Society at the recent Atlantic City meeting. He succeeds Dr. W. F. G. Swann, director of the Bartol Research Foundation of the Franklin Institute.

A SOUND film presenting Dr. William H. Welch speaking on "Reminiscences of the Early Days of the Medical School" will be shown at the Rockefeller Institute for Medical Research, New York, at four o'clock on January 18. Admission is by invitation.

DR. EMIL ARTIN, professor at Hamburg, and Dr. Emmy Noether, professor at Göttingen, have been awarded the Ackerman-Teubner Memorial Prize, Leipzig, for research in mathematics.

DR. R. S. BASSLER, head curator of the department of geology of the U. S. National Museum, has been elected an honorary member of the Society of Natural History of Tartu, Esthonia, in recognition of his work on the geology and paleontology of that country published as a museum bulletin some years ago.

The British Medical Journal reports that the Dr. Sophie A. Nordhoff-Jung Cancer Prize for the best work in the field of cancer research in recent years has been awarded to Professor Max Askanazy, of the University of Geneva, in recognition of his experimental research work and his critical presentation of larger and general problems in the same field. The commission of award was composed of Professors Borst, Doederlein, von Romberg and Sauerbruch.

WE learn from *Nature* that the Hopkins prize for the period 1924–27 has been awarded by the Cambridge Philosophical Society to Professor G. I. Taylor, Yarrow research professor of the Royal Society, for his researches on hydrodynamics and on the deformation of crystals; and the prize for the period 1927–30 to Professor P. A. M. Dirac, who was recently elected Lucasian professor of mathematics in the University of Cambridge, for his researches on the theory of quantum mechanics.

AT their meeting at Atlantic City on December 27, the trustees of the Mathematical Association of America awarded the Chauvenet Prize of $100 to Professor G. H. Hardy, of the University of Cambridge, England, for his paper entitled "An Introduction to the