

SCIENCE NEWS

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A CONFERENCE ON CANCER

ONE hundred of the foremost cancer experts of America and Europe are planning to meet in the United States in order to come to an agreement on what the world really knows about cancer. The international meeting, which is to be held at Lake Mohonk, New York, from September 20 to 24, is under the auspices of the American Society for the Control of Cancer.

The conferees will include about twenty of the most eminent surgeons, radiologists and research workers of England, France, Switzerland, Belgium and Holland.

The meeting is expected to have far-reaching results in showing the public that there is a great deal of dependable knowledge upon which science is agreed about cancer control. This definite knowledge is not to be confused with the many reports of theories and pieces of cancer research that may represent important progress but that are not yet established as usable facts. In taking account of the known facts about cancer control, the doctors will discuss the latest information on surgery, use of radium and X-rays, hospitalization, public education and the importance of early diagnosis.

"Nothing less than the utmost authority and the most reliable opinion will suffice to meet the pessimistic attitude of many people who think that cancer is incurable, hereditary and infectious," the American Society for the Control of Cancer announced in stating the purposes of the meeting.

"The strongest argument possible must be presented to convince the man in the street, who, thinking that no two doctors agree upon anything relating to cancer, is inclined to listen to the claims of quacks who hold out a prospect of cure, until the disease is too far advanced to make skilful help of any use.

"The truth is that there are many things which physicians and surgeons can agree upon with reference to cancer, and if these agreements can be expressed in simple, concise and graphic language, the results will be of incalculable value. They will be helpful not only in America but throughout the world."

Among the well-known physicians of Europe who will attend the symposium are Sir John Bland-Sutton, president of the Royal College of Surgeons, in London; Dr. Henri Hartmann, professor of surgery at the University of Paris; Dr. Claude Regaud, director of the Pasteur Laboratory of the Radium Institute of Paris; Dr. R. Bierich, director of the Institute of Cancer Research in Hamburg; Professor J. Maisin, director of the Cancer Institute of the University of Louvain, and Professor William M. deVries, president of the Netherlands Cancer Institute.

ECZEMA AND ERYSIPELAS

WHILE blood tests have played for some time a prominent part in diagnostic methods in the current medical mode, chemical analysis of the skin of animals as a

means of studying the underlying causes of skin diseases like eczema has been comparatively neglected.

In a series of experiments with rabbits it has been shown by Dr. J. V. Klauder and Herman Brown, of the Research Institute of Cutaneous Medicine, that the quantity of the element calcium contained in the skin bears an important relation to its irritability. The greater the amount of calcium present, apparently, the lesser is the degree of irritability possessed by our epidermal covering.

While this was not the case with all the rabbits, it was true of a sufficient majority to establish an important connection. It was likewise found that just the inverse relation existed with respect to the element potassium. The more potassium there was present the greater was the cutaneous irritability registered by the animals.

Since potassium stimulates cell activity and calcium has the opposite effect, the investigators suggest that eczema may be due to a condition in which the biochemical mechanism of the nerves and cells of the skin are out of equilibrium.

Dr. Klauder in collaboration with Drs. L. L. Righter and M. J. Harkins has also conducted an important investigation of a skin infection generally prevalent among fishermen and fish handlers. This infection, medically termed a severe form of erysiploid, usually arises from a bite from the fish on the hands or a wound from the spines or fins. Since it frequently puts a fisherman out of commission from two to six weeks its bearing on the fish industry is of considerable significance. It is said to be fairly common among salt water fishers throughout the world.

Dr. Klauder and his associates have identified the causative organism as the same bacterium but of a different strain as that responsible for erysipelas in pigs and is engaged in further research to find a specific treatment for the infection.

A NEW ELECTRIC LAMP

A NEW form of electric light that uses so little current that if burned steadily for a week the electricity costs less than two cents was an important development of the past year, according to a report to the American Institute of Electrical Engineers in convention at White Sulphur Springs, W. Va.

The new lamp, which is intended more for indicator or marker purposes than for general illumination, is known as the "Moore gaseous conductor lamp," after its inventor, and contains a mixture of the rare atmospheric gases helium, neon and argon. Inside the bulb are two electrodes, with no metallic connection between them, but when the current is turned on the gas glows around one of them, or both, if the current is alternating.

While the actual candlepower of the lamp is very low, about one two hundredths of a candle, its low current consumption permits it to be used as an indicator on an electric iron to tell when the current is on. Or it can be

placed in an electric switch to facilitate finding it in the dark. Another advantage of the lamp is that, unlike the ordinary incandescent lamp, which continues to glow for a moment after the electricity has been turned off, the new lamp goes on and off instantly. This quality is a necessary requisite of lamps for certain scientific uses and this type of lamp is used in apparatus for telephoning photographs. The lamp at the receiving end, throwing light on the photographic film must vary precisely as the current supply is increased or diminished by the light sensitive photoelectric cell at the transmitting end.

Among the other recent developments in electric lighting cited were the use of half billion candlepower searchlights, visible for 150 miles, as beacons for the air mail at night; the scientific study of lighting changes and industrial production, sponsored by the National Research Council, and the greater attention being given to specialized training for illumination experts.

ITEMS

A NEW race of negroid butterflies and moths may arise in the industrial districts of England and on the continent. Such large numbers of a certain family of moths showing a marked dusky tendency are observed in the smoky environs of manufacturing regions that scientists have sought to explain the phenomenon as the result of the insects' eating lead and manganese salts deposited from factory smoke on the leaves of their plant foods. Dr. J. W. H. Harrison, a zoologist of Armstrong College, has verified this suggestion by experiment and has produced a whole series of black moths in three different species. Some, kept as control and fed on normal food, showed no signs of melanism, the scientific term for this condition that is the opposite of albinism. Two other groups, one fed on roadside hawthorn from an industrial section in North Durham, and the other furnished with hawthorn leaves treated with lead nitrate and manganese sulphate, both produced large numbers of black descendants. Further experiments are in progress to ascertain if the active agent in causing the color change is the metal or the acid radical in the chemical compounds involved.

SAWDUST for breakfast has materialized as an actual fact, but for cows rather than for human beings. Cattle do like it, however, and on the basis of the state of supply and costs of production, sawdust is not yet a practicable source of nourishment even for cows, according to a report by J. G. Archibald. To render the sawdust available as a cattle food it is treated with weak sulphuric acid which converts part of the cellulose, the basic chemical constituent of all wood, into sugar. The liquor resulting is neutralized with lime and then evaporated to a thick syrup, which is finally mixed with the dried residue. The product when ready for feeding is a dark brown, powdery meal with a sweet woody odor and a woody flavor. But, alas; so sensible dairy cow could be persuaded to eat more than four pounds daily and produced less milk than when fed on from one half to one third as much cornstarch. The experimenter concludes that for the present sawdust has little economic value as fodder.

RESEARCHES IN PROGRESS AT COLUMBIA UNIVERSITY

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RESEARCHES and new investigations of "unexampled length and importance" are under way at Columbia University, according to a summary of reports of heads of departments to President Nicholas Murray Butler made public recently.

During the academic year now closing President Butler, it was stated, authorized allotments from the university's funds in aid of more than two score undertakings covering almost every possible field of scientific and literary activity.

A study into the patriarchal family, the social and political reasons for its origin and existence, its decay and the development of the individual family, is being conducted under the direction of Professor Vladimir G. Simkhovitch.

Under Professor Franz Boas, researches into the social organization and mythology of Indians is being carried on in the Southwest by Dr. Gladys Reichard and Dr. Ruth Benedict. In Zuni, Dr. Benedict has been able to get esoteric versions of the more ritualistic myths, and the six complete "medicine talks" of the emergence belonging to the three ranking priests and the three katchina impersonators, said Professor Boas, in summarizing the progress of the researches. "The material is of importance in the understanding of ceremonial procedure and of the mythological pattern in the Southwest. Dr. Reichard has almost completed her manuscript on the social organization of the Navaho and hopes to finish it before the end of the year."

Studies on fungi, in which the stages in the process of building a many-celled plant body out of independent ameboid cells have been watched, are being conducted by the research assistant of Professor Robert A. Harper, head of the Columbia department of botany, and a scientific director of the New York Botanical Garden. The aim of the study, according to Professor Harper, is to clarify the relation of cells and cell processes to growth and morphogenesis.

Recent changes in corporation laws which are causing a trend of large business organizations from one state to another where laws are less stringent is the subject of a survey which Professor Henry R. Seager will incorporate in a book, "The Problem of Trusts."

In the department of zoology and protozoology Professor E. B. Wilson has been making investigations into the structure of the protoplasm and Professor Gary N. Calkins has been studying the biology of the protozoa.

Researches going on in various branches of chemical science include a study of the enzyme invertase by Professor John M. Nelson, experiments with isotopes by Professor John Kendall and studies in photochemistry by Professor J. L. R. Morgan.

Professor Raymond C. Moley will visit cities all over the country this summer scrutinizing the work of the criminal courts, in preparation for a work on "The Administration of Criminal Justice."

Transcription of old records from the Manor of Wye, Kent, which will make possible a clearer understanding of "the difficult and interesting problem of Kentish custom and manorial organization in the Middle Ages, a question that has not yet been adequately studied," is going on under the supervision of Professor A. P. Evans.

Investigations in the statistical field, including a study of population census counts from 1850 to the present year, are being conducted by Professor R. E. Chaddock.

A scientific survey of Porto Rico and the Virgin Islands, in which Columbia is cooperating with the New York Academy of Sciences, the American Museum of Natural History and the New York Botanical Garden, has enlisted the services of Professor J. F. Kemp and Assistant Professor H. A. Meyerhof. Under the direction of Professor Kemp, Professor Meyerhof has made detailed studies of the physiography, geology, petrology and paleontology of the Virgin Islands, Culebra and Vieques.

The coastal plain shoreline and the problem of coastal subsidence is a subject on which Professor Douglas W. Johnson, authority on battlefield formations, and a Chevalier de la Legion d'Honneur, is working. The New York City Department of Docks and a firm in Eastport, Me., will cooperate with Professor Johnson by operating four tide gauges each in the waters of Jamaica and Newark Bays and Cobscook Bay, Me. The U. S. Coast and Geodetic Survey will furnish the gauges and compute the results of the observations. This investigation will bring new knowledge about the nature of the mean sea-level surface, the only plane by which it is possible to detect slow changes in the relative levels of the land and sea, said Professor Johnson.

Professor W. L. Westermann will base important studies of trade between Palestine and Egypt, and the papyrus industry, on papyri recently purchased with research funds. Calorimetric apparatus recently bought with research funds will be installed in the physics building this summer, and will be ready for use in the fall.

Two years have been spent in the collection of cases from real life to be used as a practical approach to the teaching of the economic theory by Professor W. E. Weld. This work has made possible the teaching of economics in Columbia College by the case method.

Researches to determine the therapeutic value of organic selenium derivatives and to gain additional knowledge concerning their chemistry are being conducted by Professor Marston T. Bogert, a past president of the American Chemical Society.

Family resemblances in intelligence, inter-relations of physical and mental traits, and emotional "drives" in animals are being studied by the department of psychology. "Several months were spent in collecting data in seven New England villages," says Dr. H. E. Jones, in charge of the study of family resemblances. "Intelligence tests were given to seventy pairs of husbands and wives, one hundred and thirty siblings and one hundred and ninety children."

Dr. Henry E. Garrett is using records of Columbia College men to discover the relation between rote memory and logical memory and the rôle of each in general intelligence and academic success. Dr. Carl J. Warden is

in charge of the study of emotional "drives" in animals.

Dr. Victor LaMer is supervising the work of assistants investigating the theory of electrolytes, and Dr. E. B. Greene has begun a study of the history of population in the United States, in which material not included in earlier collections has already been found.

Laboratory investigations in food chemistry and nutrition made possible through the Borden Research Fund, are going on under the direction of Professor Henry C. Sherman. Thus far, according to Professor Sherman, they have dealt mainly with the vitamin values of foods and the influence of heating on vitamin values, the significance of vitamins and some of the amino acids and mineral constituents of foods. By means of the Walker-Gordon Research Fund the vitamin values of milk, as produced under various conditions and influenced by the seasons of the year, are being investigated.

Another field in which the department of chemistry is working is that of perfume materials, to gain additional light upon the connection between chemical constitution and physiological action. The investigators seek to learn more about the way nature builds up substances in the living plant, according to Professor Bogert, under whose guidance the researches are being carried on, so as to be able not only to duplicate these products and processes but to create new ones.

"The perfumery field is but one of many under investigation in our organic laboratories," added Professor Bogert. "Others have to do with synthetic drugs, synthetic dyes, the mechanism of reactions, the synthesis of totally new types of organic compounds, and so on."

Researches in many phases of medical science are being carried on by the staff of the College of Physicians and Surgeons, according to Dean William Darrach. Some of the fields in which studies are being made include bacteriology, biological chemistry, medicine, surgery, gynecology, physiology and public health.

Health hazards involved in the use of various metals in cooking utensils, causes of seasonal variation in children's growth in Canada, Hawaii and New York, mortality of occupied males in New York City by occupations, and the epidemiology of colds in a controlled country school, are typical problems which the Institute of Public Health, under Dr. Haven Emerson, is investigating.

Special studies of scarlet fever, diabetes, epilepsy, the common cold, heart disease, pernicious anemia, rickets and other ills are engaging the attention of various members of the medical staff. A study of the constitution of man in relation to disease, to discover whether certain types of individuals are more prone to certain diseases than others, is being made by Dr. George Draper.

Homer L. Broyant expects to complete this summer a study of the sugar insulin curve of the alligator for the department of physiology. Other of the many problems this department is studying include the industrial hazard of radium and mesothorium in luminous paints, on which Professor Frederick B. Flinn is working, and the graphic registration of disorders of muscular coordination in animals, in which Professor F. H. Pike and Dr. Frederick Tilney are cooperating.