

# Lead Joins Radium in Cancer War

Medicine

Following are reported some of the important papers presented at the Minneapolis meeting of the American Medical Association during the past week.

In the base metal, lead, there may rest hope of longer life for cancer sufferers. X-rays and radium have brought relief and sometimes apparent cure to cancer patients and now lead therapy joins, experimentally, hands with radiation in the treatment of the dread disease.

Hopeful clinical tests of lead compounds upon over fifty patients were reported to the American Medical Association by Dr. H. J. Ullmann, of the Santa Barbara, Calif., Cottage Hospital. Since lead is a poisonous metal, great care must be used to select the compound of lead that will poison the body least and still produce an effect upon the unruly cancerous growth. The two least poisonous compounds and the only ones found by Dr. Ullmann to be suitable for intravenous cancer therapy are colloidal lead phosphate and tetra ethyl lead, the latter of which is the compound added to gasoline to stop motor knocks. The injection of small doses of the lead compound is made about four days before the radiation of the cancer and the lead seems to enhance the effect of the irradiation. In some cases the improvements from this combination treatment were striking, while in others it was not so effective.

Using colloidal lead phosphate in conjunction with irradiation, Drs. Albert Soiland, William E. Costolow, and Orville N. Meland of Los Angeles have had experiences that cause them to conclude that "lead, as used by us, is not the solution of the cancer problem." Temporary good effects are obtained, but "viewed over a longer period of time, the method is not encouraging."

## *Public Health is Doctors' Care*

Care of the public health is the particular province and special responsibility of the physician, said Dr. William Sidney Thayer of Baltimore, new president of the Association, in his inaugural address.

"In the first place, we should use every means in our power to maintain the character of our public health officials," said Dr. Thayer. "Conditions have changed for the better, but we are still treated too often to the humiliating spectacle of a mayor who appoints his family physician or some friend who has tired of practice to the position of commissioner of health."

Speaking to the 6,000 physicians representing the organized medical profession of the country, Dr. Thayer reminded them of the object of their association as stated in its constitution: ". . . to promote the science and art of medicine and the betterment of public health." It is this altruistic attitude that marks the difference between medicine and any other profession or trade, which has financial gain as its primary object. The true physician will not forget this difference, and while he must earn a living, "if his main interest be not in his profession . . . if financial gain be his sole object—he will accomplish little . . . and his name will be soon forgotten."

## *Rotogravure Skin Disease*

Disease lurks within the pages of the rotogravure sections of the Sunday newspaper. Those rare individuals who are susceptible to this new skin eruption described by Dr. Edward A. Oliver, of Chicago, must forego the pleasure of reading the brown picture sheets on doctor's orders.

A patient came to Dr. Oliver suffering from a dermatitis that was not cured by ordinary remedies. Realizing that it was probably due to some irritating substance, he was told not to use hair lotions, dyed clothes or to come into contact with other known skin irritants. The eruptions continued, but Dr. Oliver noticed that they were worse on Monday or Tuesday, indicating that the infection occurred on Sunday. The only difference in the patient's life on Sunday was the fact that he read the Sunday papers, and since the Sunday papers differed from the daily editions only by the inclusion of the comic and the rotogravure sections, these portions of the newspaper were suspected. The comics were exonerated, but the roto pictures were found guilty. When the patient shunned the familiar brown ink sections, he recovered and remained well.

Fourteen other cases were discovered and cured subsequently. Dr. Oliver traced the cause of the irritation to a dye used in the brown rotogravure ink, known as a diazo color, para red. This type of skin disease, that inflames the face, eyelids and sometimes the neck, is not found among the printers who handle the ink in printing. The disease is not believed to be very widespread and

seems to occur only in those who have an idiosyncrasy to the special sort of ink used in rotogravure printing. Ordinary ink has been found to be harmless.

## *Annual Health Overhaul Urged*

Inspection of the president and other high executives of industrial companies for wear and tear, incipient disease and healthful living was urged by Dr. Halstead G. Murray of Framingham, Mass., on the grounds that the key men of industry should have the same care that machinery, buildings and the laboring staff are now given in most progressive factories.

Health examinations of executives of one company showed that while such high-salaried healthy men do not suffer from much organic disease, nevertheless they have functional derangements caused by mental strain, worry, improper living and the neglect of simple rules of hygiene.

Errors in diet, excessive smoking, lack of exercise in winter, insufficient rest and sleep and chronic constipation were bad habits of some of the executives.

Men who were found to be on the "ragged edge" or in a rundown condition should be sent out on special vacations at once, Dr. Murray said. He also advocated an extra afternoon off each week for golf or other exercise. Vaccination against smallpox and inoculation against typhoid fever is prescribed for those who travel.

## *Serum for Infantile Paralysis*

The successful treatment of infantile paralysis by means of convalescent serum was reported by Drs. W. Loyd Aycock and Eliot H. Luther of the Harvard Medical School and the Vermont Department of Health.

When the sufferer from poliomyelitis was given injections of the serum immediately after being taken sick and before paralysis set in, the serious paralysis after-effects were prevented in many cases. Only 19 out of a hundred of the treated cases developed total paralysis, while 65.6 per cent. of the untreated non-fatal cases had this unhappy ending. Among the treated cases there was a strikingly lower percentage of the severer grades of paralysis. The number of deaths was also greatly reduced by the convalescent serum.

As infantile paralysis is one of the nearly hopeless (*Turn to next page*)

# What Chromosomes Do

Genetics

EDGAR ALTENBERG in *How We Inherit* (Holt):

Belief in the inheritance of acquired characters rests on an old conception of heredity in accordance with which the reproductive cells were the products of particles that came from the various parts of the body and that were transmitted through the blood stream. It was supposed that there were particles of a particular kind each from the muscles, nerves, etc. The reproductive cells were conceived of as a sort of little house of representatives. If for example the muscles of a person had been well developed by exercise the muscle particles would on this view be well represented in the reproductive cells and the offspring would be born with better muscular development than if the parent had not developed his muscles. In brief, the material from which the next generation developed, the germ plasm, was regarded as a product of the body (the soma).

According to the more modern view of heredity, the chromosomes and the genes contained within them are the material basis of inheritance and constitute the germ plasm. The chromosomes are contained within all cells of the body including the reproductive organs. They originate in just one way: by the growth and division of pre-existing chromosomes, a process which takes place when a cell divides and forms new cells. All the chromosomes of the body are descended in this way from those of the fertilized egg, the cell with which the

individual begins his development. The chromosomes of the fertilized egg, in turn, are derived from the reproductive cells that produced it, the egg of the mother, and the sperm cell of the father.

The fact that the chromosomes are the material basis of heredity makes an inheritance of acquired characters practically impossible. The hereditary particles (the genes) are not built up in each generation by the body and sent to the reproductive cells, as the older concept had it, but they are continuous with each other from one generation to the next through the processes of heredity and reproduction. By heredity, they are transmitted to us from our parents; by growth and reproduction they increase in numbers and populate all the cells of our body as we develop. The most peculiar thing about a gene is that it can reproduce. It can make two genes, each exactly like itself, through the process of growth and division. It does not as a rule change from one generation to the next.

"But," you may object, "surely the genes are not little gods, totally unmindful of their surroundings and free from all outside influences." Your objection is well taken, but it by no means follows that the character of the genes is constantly changing in direct response to bodily changes. A gene is dependent upon the body for just one thing: for its nourishment and other conditions necessary for its growth. If these conditions are not right the gene simply

dies as a rule; it rarely changes its nature. When it does, we have a mutation.

Unless there were something which maintained its identity from one generation to the next, there could be no human race nor any other distinctive form of life. We resemble our parents because we have the same kind of genes as they. We come to have them through inheritance.

There is another matter that must be considered in this connection, concerning what it is that we inherit. We do not really inherit from our parents their blue eyes, their skin color, or any other body characteristics. None of these things are contained in the fertilized egg. What we really inherit are genes. *We do not inherit traits; they develop.* Under a given set of outside conditions, the traits which develop are determined by the genes. Change the environment and you change possibly the course of development and so produce an acquired trait as when you go to the tropics and get a tanned skin. But you do not necessarily change the nature of the genes themselves. With a return to normal conditions development is again of the usual type because the genes have maintained their identity during the interval. In brief, traits are an offshoot, so to speak, of the germ plasm in each generation. They do not make the germ plasm. Acquired traits in particular are not inherited, because traits in general are not.

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## Medical Meeting—Continued

children's diseases that has been increasingly prevalent during the last decade, the use of this serum may save many lives and much misery.

### *Liver Fad May Harm Well*

The fad of liver eating which has sent the price of this poor man's beef-steak up to eighty cents a pound may do harm to healthy individuals and deprive those pernicious anemia sufferers of this life-saving meat which they really need, the association was warned in a program devoted to the latest reports upon the conquest of this hitherto hopeless disease. Dr. William S. Middleton, of Madison, Wis., reported that other types of

anemia do not respond to the specific element in liver, although the Minot-Murphy diet, which includes liver, has been generally successful in treating secondary anemia.

Additional proof of the efficacy of liver in the treatment of pernicious anemia was presented in a paper by Dr. James H. Means and Dr. Wyman Richardson, of Boston. In reviewing the treatment of this disease, Dr. Means made a suggestion as to its nature. It may be the result of a diet deficiency rather than a poison or infection. The fact that many people live on insufficient diets without serious trouble, and the discovery of a successful cure of pernicious

anemia by means of predigested foods indicate that the primary cause may be a gastric defect.

### *3,000,000 Children Deaf*

Three million school children are deaf and in need of systematic treatment, Dr. E. P. Fowler and Dr. H. Fletcher, of New York, declared. Tests of 1,171 children, covering a period of two years, revealed that 4.9 per cent. were seriously deafened.

The tests were made with an audiometer and five receiver holders, making it possible to test forty children at one time. All children who were found to be below standard were retested at least once.

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