

# THE SCIENCE NEWS-LETTER

*A Weekly Summary of Current Science*

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## COLLOIDAL LEAD JOINS X-RAYS AND SURGERY TO RELIEVE CANCER

With thirty almost hopeless cancer cases apparently cured Prof. Blair Bell's lead treatment comes well to the front, if not to the center, of the crowded arena of cancer research.

Of the 227 practically hopeless cases treated since November, 1920, 30 have been pronounced cured, in ten the cancerous growth has been arrested and nine are considered greatly improved. Dr. J. G. Adami, vice-chancellor of the University of Liverpool in a comment in the English medical journal *Lancet*, in which Prof. Bell's papers on the lead process of treating cancer have appeared, says that the thirty patients show no sign of lead poisoning or recurrent cancer, are in good bodily condition and are following their usual occupations.

The funds to carry on this line of cancer research have been furnished by private endowment and are administered by the Liverpool Cancer Research Committee of which Prof. Bell is now director. In his efforts to find a preparation of lead that would react against the cancerous cells and not harm the surrounding tissue he has been assisted by the department of Physical Chemistry of the University of Liverpool.

This has proved to be one of the most serious problems of the whole method of treatment. Lead salts injected directly into the circulatory system are poisonous. Colloidal lead, with which the best results are obtained, consists of small particles of lead suspended in a state of more or less unstable equilibrium. The problem of the chemistry department of Liverpool, then, has been to devise a method by which a lead colloid could be made more stable and effective. A group of scientists working under Prof. W. C. McC. Lewis have been conducting a series of investigations which, while they have produced a considerable improvement, have not yet been able to make a preparation that will stay suitable for use for more than a few days.

As yet, according to the account in *Lancet*, the product is still so unstable and difficult to prepare as not to warrant the publication of the procedure necessary to make it. It is hoped that ultimately a permanent colloid will be perfected which will be then made available for use in the hands of clinicians carefully trained to administer it.

In his most recently published analysis of his results Prof. Bell stresses the point that much work must still be done to make a more active preparation of lead that will be less poisonous to the system generally. All types of malignant

growths, he declares, are probably amenable to the beneficial influence of lead if only enough of the metal can reach them.

He does not hesitate to employ auxiliary measures of surgery, X-rays, or radium when circumstances seem to warrant but recommends that when the growth has been partly or apparently entirely removed, "intravenous injections of lead should be employed within a few days of the operation when possible."

In conclusion he states that "the method of treatment is difficult, and to some extent dangerous and can only be safely employed by those who are thoroughly experienced in the work, and have laboratory facilities at their disposal."

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#### DEAF LEARN MOVEMENT OF SPEECH BY TOUCH

A way to show totally deaf persons that spoken language has rhythm is being tested by Dr. Robert H. Gault, professor of psychology in Northwestern University, who, under the auspices of the National Research Council, is conducting experiments upon students of Gallaudet College for the Deaf. The method has grown out of Dr. Gault's experiments in relation to sensation of touch. If it is put into use in schools for the deaf, it will help the child who has never heard the sound of spoken words to talk much more normally.

"The deaf person has great difficulty in grasping the idea of the swing of human speech," says Dr. Gault. "That is why his sentences often sound stiff-jointed and queerly accented. By means of apparatus which conveys the vibrations of a speaker's voice to the finger tip of the deaf person, he is able to catch the swing of the sentences and the grouping of words and phrases, and fine distinctions among words."

The apparatus used for these experiments is the same that Dr. Gault has used for some time in testing the practicability of enabling the deaf to understand speech by the way it feels upon their finger tips. The speaker talks into a transmitter, and the vibrations of his voice are amplified 175 times. The deaf listener, who may be in a different part of the building, holds in his hand a receiving device that looks like a radio earphone, and presses one finger against the disc to catch the vibrations. Different vowels and consonants have different vibrations, and one by one, the student learns to identify the sounds that make up the language.

Some of the deaf subjects who have spent no more than 120 hours in the laboratory have learned to recognize several hundred words with their fingers. One succeeded in identifying 120 sentences without error, after having been over them but eight times, and others have done almost as well.

These subjects, Dr. Gault says, have now acquired a familiarity with the swing or movement of speech which they never had before. This is giving them a thrill of speech that they never experienced. They enjoy the movement of verse, some verses more than others. They can take a list of unfamiliar sentences and mark them to indicate how a good reader might read them. Subjects of corresponding age and school experience who have not taken part in any of Dr. Gault's experiments