



CHROMOSOME PHOTOGRAPHED—This picture showing the structure of gene-carrying matter was taken by an electron microscope.

MEDICINE

Clues to Stomach Cancer

Simple indications lead to detection of stomach cancer if they are given attention early. Cancer can be removed before it grows large.

Highlights of the American Medical Association's centennial meeting, covered for Science Service by Jane Stafford, can be found on pages 387 through 390 and page 392.

► **NEW CLUES** for detection of stomach cancer before it becomes incurable were presented by Dr. Gilson Colby Engel of Philadelphia at the meeting in Atlantic City of the American Medical Association.

The clues are so simple that the average patient and doctor might overlook their significance. They are: a weak and tired feeling; loss of appetite, particularly for meat; and a mild kind of indigestion or stomach discomfort that comes either before or after eating.

Stomach cancer is at present one of the most hopeless forms of this disease. It kills 38,000 persons a year in the United States, more than any other kind of cancer. One person dies of stomach cancer every 18 minutes.

This "startling" high mortality rate can be reduced, Dr. Engel stated.

Stomach cancer can be cured by an operation to remove the cancer, if the patient gets to the surgeon before the cancer has grown so large and spread so far through the body that it is too late.

The operation, even when the entire stomach is removed, carries a mortality rate of only 18%. If only part of

the stomach needs to be removed, the mortality is less than three percent. But without the operation, mortality for stomach cancer is 100%.

Pain, loss of weight, anemia, nausea and vomiting of blood are not reliable early signs of stomach cancer. In the majority of cases, they appear too late.

For saving the thousands of lives taken each year by stomach cancer, Dr. Engel urged the following procedures:

1. Patients to see their doctors if stomach symptoms of any kind, or a weak, tired feeling or loss of appetite lasts more than two weeks.

2. Doctors to make X-ray studies at once on patients complaining of these symptoms. "You must not forget that the patient has tried all the medical preparations and vitamins before he came to you," Dr. Engel warned.

3. Every annual physical check-up to include X-rays of the stomach.

4. Operation to be done on any patient diagnosed as having stomach ulcer in whom after four weeks of medical treatment X-rays show the ulcer still present even if the patient no longer has symptoms.

Many patients with stomach cancer, Dr. Engel said, are relieved of symptoms by medical treatment for stomach ulcers. But the relief is only temporary. And when next they have pain, indigestion

and other symptoms, the cancer has reached the hopeless stage. It is because of this danger, when early stomach cancer is mistaken for stomach ulcer, that he urged operation if the supposed ulcer still shows on the X-ray picture after four weeks, even when the patient's symptoms have been relieved.

Science News Letter, June 21, 1947

GENETICS

Knowledge About Heredity From Photograph Studies

► **THIS PICTURE**, which an imaginative youngster might tell you is a Jubjub Bird fleeing from a Fruminous Bandersnatch, is in sober actuality a record of the newest triumph of that almost fabulously powerful research tool, the electron microscope. It is the first electron microscope photograph of chromosome details to be published in a newspaper. Similar photographs were published in *Science* (June 13).

Chromosomes, as you may recall, are the extremely minute particles of living matter in the nuclei or centers of cells that carry the units of heredity, or genes. Genes determine whether you are blonde or brunette, tall or short. They are so small that even the most powerful of ordinary microscopes fail to give sufficiently large-scale views of their details. But they are so fragile and delicate that there seemed no way to lay them out properly for the bombardment with electron streams that makes pictures in the electron microscope.

The problem was finally solved by Prof. John T. Buchholz, head of the botany department at the University of Illinois. Using instruments so fine-