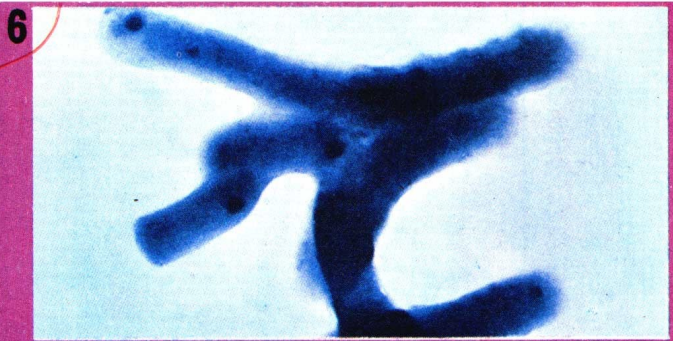
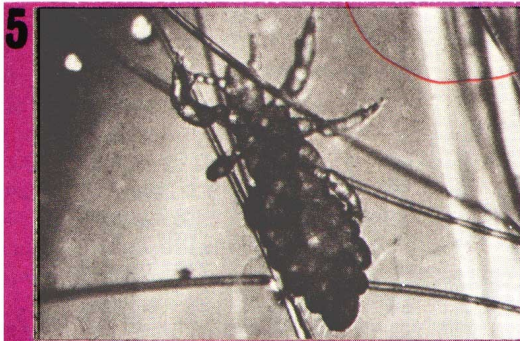




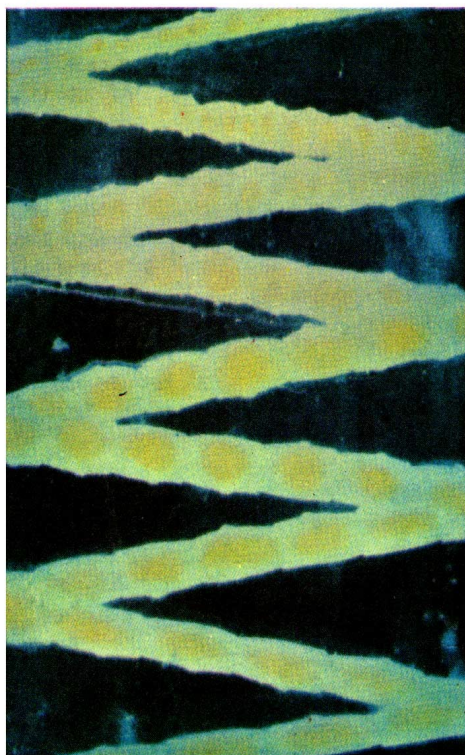
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PREVENTION IS BETTER THAN CURE

Disease can be prevented only if the fundamental cause is known. The nutritional diseases and very many of the infectious diseases are completely preventable. A correct diet containing sufficient protein, carbohydrate and fat, vitamins, and minerals is all that is needed to eliminate all nutritional illnesses. Vaccination, the use of prophylactic drugs, as in malaria, the eradication of disease carriers such as flies, mosquitoes, and lice, and simple food hygiene effectively limit the spread of almost all infectious diseases. A knowledge of the irritant chemicals used in industry can eliminate industrial poisoning and skin disorders.

Without such knowledge, diseases can only be treated. Diabetes can be treated by diet and by insulin obtained from pig pancreas, high blood pressure can be treated by rest and drugs, and neoplastic disease can be treated with X-rays and surgery. None of these illnesses nor hundreds more with imperfectly understood causes can yet be effectively prevented. Among these are the two great killing diseases of the 20th century—cardiovascular disease and cancer.

A fully-grown tapeworm, such as this one wound inside a glass jar, can be as long as thirty feet



FEELING ILL

In almost all diseases it is not the disease process which makes the victim aware of his illness but the symptoms which the disease causes. In the common cold, for example, the growth of common cold viruses in the nasal *mucosa* is imperceptible, but the feeling of general ill health and the stream of watery mucus from the nose tell the victim the exact nature of the disease which afflicts him. Similarly, in all other diseases, the disease process causes the symptoms, and it is these symptoms which the victim is conscious of and which produce the sensation of feeling ill.

The symptoms associated with individual diseases are very well known, for their recognition is of great importance in diagnosis. The way in which diseases cause symptoms, however, has been studied less thoroughly and is still rather mysterious. Even the very common sensation of merely feeling unwell, a symptom known to physicians as *malaise*, presents problems which are unsolved. *Malaise*, it is true, is often associated with a raised body temperature, and this in turn may be associated with the presence in the body of poisons produced by invading microbes, but the precise biochemical derangements which evoke *malaise* are unknown.

Like *malaise*, pain is a symptom which occurs in a great many different diseases. This symptom is known to be due to the stimulation of pain receptor nerves and is therefore a result of injury, of inflammation, of pressure, or even of the lack of oxygen in those tissues which have great need of it.

Besides *malaise* and pain, which are symptoms of a general character, there are many symptoms of a more specialised nature associated with the diseases of particular organs. Diseases of the alimentary system frequently disturb the digestive processes and result in vomiting and diarrhoea; diseases of the nervous system may impede the passage of nerve impulses along the nerves and so produce anaesthesia or paralysis; and diseases of the respiratory system may reduce the transfer of oxygen and carbon dioxide through the lungs and thus bring about breathlessness.

For the victims of each disease the complex of general and localised symptoms produces the experience which is known as 'feeling ill'. For the physician these same symptoms are the clues which lead to the correct diagnosis of the illness and thus to the correct treatment.