PHYSIOLOGY

American Scientists Take Part In Physiological Congress

Meetings in Leningrad and Moscow Draw Large Attendance From Abroad; Presided Over by Prof. Ivan Pavlov

MANY American scientists were among the 400-odd foreign delegates to the Fifteenth International Physiological Congress, held at Leningrad and Moscow Aug. 9 to 18 inclusive. The opening address was delivered on Aug. 9 by Dr. Walter B. Cannon of Harvard University, who spoke on "Some Implications of the Evidence for Chemical Transmission of Nerve Impulses."

The Congress was held under the presidency of the world-famous Russian scientist Prof. Ivan P. Pavlov, now almost 86 years old but still engaged in active research. Prof. Pavlov's pioneer work on the "conditioned reflexes" of animals laid the foundation for a large part of modern psychological doctrine.

Meetings were held in Leningrad from Aug. 9 to Aug. 16, and in Moscow on Aug. 17 and 18. After the close of the Congress, many excursions will enable foreign scientists to visit Russian laboratories and teaching institutions, as well as to see the life of the country generally.

Importance of Bile

You die if your liver stops making bile for any considerable length of time. But there are occasions when your liver stops making bile for a short period to prevent you from dying.

The physiological significance of such "bile strikes" by the liver was discussed before the meeting by Dr. Max Einhorn, New York City physician.

Bile is one of the most essential of the digestive fluids. It is produced in the liver and poured into the intestine, where food digestion takes place. If it stops very long, death is inevitable.

But it can be stopped, apparently by an automatic safety action of the liver itself, if an overload threatens. This is of especial importance, because all digested food substances have to pass through the liver before they go on to nourish the other tissues of the body. The liver's occasional "bile strikes" thus give that important organ a chance to rest up a bit.

Dr. Einhorn cited a conspicuous "bile strike" in one of his patients, a man who had stuffed himself with food at a banquet, at the same time gulping a lot of ice water. This patient was sick for several days, during which time his liver stopped making bile. Then, his digestive system having cleared itself, the liver returned to normal functioning.

Bile is so valuable, Dr. Einhorn pointed out, that it is kept going in a constant circuit, and very little of it is wasted. After it has done its work on the food in the digestive tract, it is carried directly back to the liver by a special vein that handles all the products of digestion, so that it can be used over again.

Rubbery Bones

Giving crippled patients "rubbery" bones and then bending the deformities straight is the new technique described before the Congress by Dr. I. William Nachlas of the Johns Hopkins University Hospital, Baltimore. In collaboration with Dr. David Shelling, Dr. Nachlas has worked out a diet and routine of internal medication which softens skeletal structures.

"This change of the bone to a more or less rubbery structure will permit the manual correction of deformities for which surgical treatment is either undesirable or impossible," Dr. Nachlas explained. "The straightened limbs are then held in position by a cast or other form of support while the bones are rehardened."

A new "gland extract" or hormone, which may eventually be valuable in the treatment of gastric ulcer and similar ailments of the digestive tract, was described before the Fifteenth International Physiological Congress by Dr. A. C. Ivy, professor of physiology at Northwestern University Medical School, Chicago.

Called "enterogastrone" by its discoverer, this substance has the effect of inhibiting the action of the stomach. It is produced in glandular tissue in the walls of the upper intestine when fats and sugar come into contact. It is then carried in the blood stream to the stomach, where it produces its "quieting" effect.

Quieting an over-active stomach is one of the chief ends sought for in the treatment of gastric ulcer and similar ills. At present, treatment consists either of the abundant use of fats, such as olive oil and cream, or of atropine, which causes a relaxing of the digestive muscles. Both these treatments present somewhat troublesome disadvantages.

Dr. Ivy is not yet ready to recommend his new substance for use in medicine. It must be further purified before a trial on man is warranted, he said.

He added, however, "We hope during the coming year to make sufficient progress on the chemistry of this physiologic agent to be able to try it on the human subject."

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Windpipe's "Lid" Not Used During Swallowing of Food

NEW LIGHT on swallowing and on the throat's natural defense against choking was presented by Dr. Oscar Russell of the Ohio State University, Columbus, Ohio, at the Fifteenth International Physiological Congress in session at Leningrad.

Contrary to the old idea, it is not the epiglottis or "lid" of the windpipe which guides the food down the right channel and keeps it from going into the larynx and windpipe by mistake, Dr. Russell said.

Dr. Russell's theory has particular importance for patients suffering from cancer of the larynx or voice box. In removing the cancer, various nearby parts of the throat besides the larynx are generally also removed. Three of these structures are the parts of the throat which really guide the food towards the stomach and away from the windpipe, Dr. Russell finds. Their ruthless removal in his opinion consequently accounts for the choking after food which has frequently followed these operations for cancer of the larynx.

The three parts of the throat which prevent choking, according to Dr. Russell, are known scientifically as the cartilage of Wrisberg, the arytenoid cartilages and the pulvinar. The first two isolate the larynx by combined forward movements, and the other by a backward movement.

The old idea was that the epiglottis descended from its erect position every time food is swallowed, thus deflecting it from the larynx and windpipe. In Dr. Russell's opinion, the purpose of the epiglottis is to vary the effective size of the opening of the larynx or voice box. It appears to oscillate up and down according to vocal demands, but not to shut completely, nor to have any tendency to close when food is taken.

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