

are of biological importance.

Adsorption is action of a substance holding another substance on its surface. It is adsorption, not absorption, which is what a sponge or piece of blotting paper does to water.

In past years various kinds of adsorption methods have been used in organic chemistry and biochemistry. Willstatter and his followers used adsorption for the differentiation of various enzymes. Chromatographic analysis which is being applied widely is based on adsorption phenomena.

Prof. Tiselius may be said to have mechanized and made automatic the method of adsorption analysis.

Previous investigators had shown that the chromatography of colorless substances was possible in some cases by observations of the various layers in the column of material upon which the substances being investigated had collected. When the various substances gave a color, their detection was relatively simple. When they were

colorless, it was sometimes possible to differentiate them by their fluorescence. Or the parts of the column could be tested with different specific reagents, either on the column directly or after it had been cut into sections and extracted.

Prof. Tiselius worked out a new and more general method. After passing through the column of adsorbent and before any mixing has taken place, the solution is allowed to flow through an arrangement for determining continuously the concentration by measuring some property of one of the chief substances passing through. This is done by connecting the outlet of the column to a small cell in which the refractive index, light absorption, conductivity or some other suitable property of the solution is observed continuously. The readings are plotted against the volume of flow. Apparatus that is self-registering and operates relatively automatically has been developed.

Science News Letter, November 20, 1948

Find Oil Off U. S. Coast

► LARGE petroleum accumulations exist under the American continental shelf and it is physically possible to get the oil from them, the American Petroleum Institute was told in Chicago by Mercer H. Parks and James C. Posgate of the Humble Oil and Refining Company.

Continental shelf petroleum production has passed the initial planning stage and as a result of successful drilling operations, at least two oil discoveries of possible major importance have been made, they said. These are both in the Gulf of Mexico.

Operations in open water encounter problems of the elements in addition to those usual on land. Auxiliary operations, such as transportation and drilling site preparation, they stated, become major items from technical and financial viewpoints.

The drilling sites now in use involve large platforms capable of supporting everything needed for drilling operations, as well as smaller platforms serviced by floating barges in a manner similar to that used in sheltered waters.

The two oil discoveries of possible major importance to which they referred are a producing well off Terrebonne Parish, La., of Kerr-McGee Oil Industries, Inc., and one drilled by the Humble Company off Jefferson Parish, La.

The first is a very shallow well, producing from a supercap sand through perforations about 1,750 feet deep. The Humble discovery came at a depth of about 8,650 feet in a second well drilled in the area. Until other wells are drilled, no proper evaluation can be made of the discovery, but the prospect is promising.

As generally understood, a continental shelf is the land mass lying submerged off the coast in less than some 600 feet of

water. The United States continental shelf covers 750,000 square miles, of which 129,000 are in the Gulf of Mexico. This strip averages about 75 miles in width. It is in this Gulf shelf that oil men expect to find the best oil reserves.

Science News Letter, November 20, 1948

GEOLOGY

Find Ancient Seas Were Warmer than They Are Now

► A HUNDRED million years ago the sea water off the coast of western Europe was warmer than it is now, with temperatures ranging from 64 to 80 degrees Fahrenheit. Evidence pointing to this conclusion was obtained in a hitherto unused way by Prof. Harold C. Urey and associates at the Institute for Nuclear Studies at the University of Chicago, who presented their data at the meeting of the Geological Society of America in New York.

The Chicago scientists have discovered that the limy shells of sea animals contain a slightly higher percentage of heavy oxygen than is found in the dissolved limestone (calcium carbonate) in the surrounding sea water. The difference is less when the water is warm, greater when it is chilly.

Assuming that conditions in ancient seas were the same as they are today, Dr. Urey and his group analyzed fossils from the chalk deposits of England, laid down as sea-bottom ooze in upper Cretaceous time, about 100,000,000 years ago. The limy remains of squid-like mollusks known as Belemnites proved to be their best "paleothermometer," with readings as stated.

Fresh evidence that this continent had human inhabitants during the Pleistocene

ice age has been found just south of the Scripps Institution of Oceanography at La Jolla, Calif., stated Dr. George F. Carter of the Johns Hopkins University. Here, in a river-deposited soil formation quite definitely of ice-age date, he found the charcoal of ancient fireplaces, stone tools, and shells left after the sea-food feasts of this long-gone people.

Science News Letter, November 20, 1948

MEDICINE

New Camera May Help Save Stomach Cancer Victims

► A NEW CAMERA which shows promise of saving victims of stomach ulcer by making mass X-ray detection studies possible was reported by Drs. John F. Roach, Robert D. Sloan and Russell H. Morgan, of Johns Hopkins Hospital, Baltimore, at the meeting of the Public Health Cancer Association in Boston.

Stomach cancer kills 60% of its 100,000 victims each year. The start of the disease is so insidious that there is no warning signal to attract either the patient's or his doctor's attention while the malignant growth is still in its early, curable stage.

The lens system of the camera uses reflection type optics. Its high speed makes it possible to get pictures for examination with one-twelfth the exposure to X-rays the patient would undergo with older equipment to get pictures giving the doctor the same amount of information for diagnosis.

The pictures are taken on 70-millimeter film and their low cost adds to their advantage as a mass stomach cancer detection method.

"A real reduction in the mortality of gastric cancer may be expected," the Hopkins doctors reported, if results with the camera during the first six months of a planned five-year study continue.

Science News Letter, November 20, 1948

GENERAL SCIENCE

British Rodman Medal Awarded to an American

► FOR THE FIRST time in its 13-year-old history, the British Rodman medal, awarded for outstanding work in photomicrography and related fields, is conferred upon an American. Harold F. Sherwood, of Kodak Research Laboratories in Rochester, N. Y., is the recipient. The award was made at the recent annual International Exhibition of the Royal Photographic Society held in London.

Mr. Sherwood exhibited microradiographs of thin sections of metal, wood and paper. Microradiography is a form of photography employing X-rays of low penetrating power. It is similar to medical and industrial radiography except that the X-rays used are of longer length. A typical microradiograph in his collection showed the depth of ink penetration in the paper of a postage stamp.

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