The Catalysis of Coal

(*Continued from page 49*)

Georges Patart, and still more extensively in Germany by Prof. Franz Fischer, director of the Institute of Coal Research at Muelheim-Ruhr, and Dr. Friedrich Bergius of Heidelberg. All these three European leaders in catalytic research are coming to Pittsburgh to attend the International Conference on Coal held at the Carnegie Institute of Technology, November 15-19, and what they will have to tell of the application of catalysis to industry will surprise many of our people, for in this field America is far behind Germany and France.

For instance, we have been making methanol by the old fashioned method of distilling wood, but now the Badische Chemical Company makes ten to twenty tons of it a day from water gas at a cost of only 20 cents a gallon. Methanol, formerly known as "wood alcohol," has long been employed in all countries as a denaturant for industrial alcohol, and has caused many cases of blindness in Germany and America by being used for whisky by those who were already so blind as not to tell one alcohol from another. Various other alcohols, such as butyl alcohol, made in America by fermenting corn and used for automobile lacquers, are made in Germany from water gas. The waste gases that in some sections of the United States are still allowed to escape from coke ovens unused are, at the mines of Bethune, France, cooled and condensed and utilized for making methane, benzene, ethyl alcohol and ammonia.

Owing to the catalytic process for synthetic ammonia invented by Fritz Haber, Germany is now exporting fertilizer instead of importing it as before the war. About 425,000 tons of free nitrogen from the air is now fixed for fertilizers by catalysis every year, and this takes the place of 2,700,000 tons of Chilean nitrate. But Muscle Shoals still stands idle.

Benzene, which can be made from coal in various ways, is the mother substance of the aromatic family of chemical compounds, a family of over a hundred thousand and rapidly growing. Among these are the aniline dyes and drugs that have made the world brighter and safer in our generation. One of these synthetic products, carbolic acid, is familiarly used as an antiseptic and is nearly as useful but much less familiar as one of the two components of bakelite. The other component, formaldehyde, is also an antiseptic and also made artificially.

The chief stimulus to such investigations in Europe is the search for home-made motor fuel. We Americans are not interested in this question now but some day we shall be, and meantime it is interesting to watch the chemists over the water trying to see how many different things they can make out of common coal, like children playing with the Chinese tangram.

Science News-Letter, October 23, 1926

MEDICINE

Animal Experiments Open

Experiments on animals necessary for the progress of medical knowledge do not take place behind barred doors, despite the claims of the antivivisectionists.

The animal rooms of medical laboratories are always open to responsible visitors according to a survey of the medical colleges and research institutes of the country, recently conducted by the American Association for Medical Progress.

Several directors extend special invitations to officers of humane societies so that they can see for themselves the exact conditions under which animals are kept for experimental purposes. Some laboratories will only receive visitors who have seen operations performed on human beings because it is argued that only in this way can a lay person appreciate the similarity between the two and the care taken against inflicting pain and avoiding infection.

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MEDICINE

Dishes and Germs

Germ-carrying dishes in public restaurants provide another menace to which the public is exposed. W. A. Hadfield and J. W. Yates, chemist and sanitation expert of Madison, Wis., have found how dishes can be made bacteriologically clean as well as clean in appearance. Chlorine is now widely used in treating and purifying drinking water in many communities. The experts recommend a similar treatment of dish rinsing water to kill the germs of the wash water that otherwise becomes heavily contaminated in even the cleanest establishments. They found the most satisfactory method of hand washing dishes was to use two compartments, one for washing and one for final rinse. Twenty-five to a hundred parts of sodium hypochlorite, a chemical that liberates chlorine, should be added to the rinse water in which the dishes should be immersed for at least a minute.

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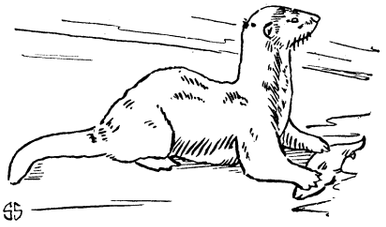
BIOLOGY

NATURE RAMBLINGS

By Frank Thone



Survivors of Civilization

This has been a great year for the ancient art of swimming, as practised by the human race, a species rather ill-adapted for swimming, all things considered, but making up in determination what it lacks in fins or gills. But it is autumn now, and the hardiest of the channel-swimming nereids and tritons have come ashore until the word shall go forth, next summer, that "the water's fine."

But the water is fine all year round for that most skilled swimmer among all terrestrial mammals, the otter. Without the special adaptations of such more strictly water-dwelling animals as the seal and the walrus, the otter is almost as much at home in their element as they are, and he has the advantage over them that he is still perfectly competent for a land life with all four feet. The otter is a member of that group of slim-bodied, short-legged carnivores that includes weasels, skunks, martens and minks, but though these are all good swimmers none of them has become primarily aquatic and fish-hunting in habit, as he has.

The otter does show some adaptations to his water-loving life, especially in his somewhat thickened tail, which serves as a powerful rudder, enabling him to twist and turn and follow the swiftest trout. His ears are reduced in size, and his fur is very smooth and sleek, looking almost like a naked skin when it is wet. It is this close, thick, lustrous fur that has made the otter the victim of unremitting persecution by hunters and trappers, and that the genus has been able to survive centuries of this is a real tribute to the otter's intelligent care of its young and its sturdy ability to look out for itself in a rough world.

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When our eyes are in motion we are stone blind.

Elk once roamed this country from coast to coast.

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