only the superfluous Matter of the Washing.

It is said, that one *Callias,* an *Athenian,* who belonged to the Silver Mines, invented and taught the making of this artificial Cinnabar. He had carefully got together a great Quantity of this Sand, imagining, from its shining Appearance, that it contained Gold: But when he had found that it did not, and had had an Opportunity, in his Trials, of admiring the Beauty of its Colour, he invented and brought into use this Preparation of it. And this is no old Thing, the Invention being only of about ninety Years Date; *Praxibulus* being at this Time in the Government of *Athens.*

From these Accounts it is manifest, that Art imitates Nature, and sometimes produces very peculiar Things; some of which are for Use, others for Amusement only, as those employed in the ornamenting Edifices; and others, both for Amusement and Use. Such is the Production of Quicksilver, which has its Uses: This is obtained from native Cinnabar, rubbed with Vinegar in a brass Mortar with a brass Pestle. And many other Things of this kind others, perhaps, may hit upon.

Science News Letter, January 31, 1931

CHEMISTRY

Hydrogenation to Bring Better Oils and Gasoline

SUPERIOR lubricating oils and gasoline prepared by combining lower grade oils with hydrogen are going to produce a marked gain in automobile engine efficiency.

Details of the engineering advantages of the new products were described in Detroit before the annual convention of the Society of Automotive Engineers, by R. T. Haslam and W. C. Bauer, of the Standard Oil Development Co.

This method of treating crudes and low grade oils with hot hydrogen under a pressure of 4000 pounds per square inch has been developed jointly by the German I. G. Farbenindustrie and the Standard Oil Company of New Jersey. The possible other use of hydrogenation in producing gasoline artificially from coal makes it of immense economic importance. So it has been the subject of much experimentation.

Hydrogenation improves the quality of the oil for lubricating or fuel purposes in three ways. Unwanted nitrogen, oxygen or sulphur compounds are removed as gas. The hydrogenated product has better keeping qualities. Also resinous or gummy substances are found to be absent after the treatment.

Hydrogenated lubricating oils which can be made from common crude unrefined oils are superior to the highest grade natural lubricants now available.

The new gasolines are richer in the naphthenic or ring hydrocarbons and therefore superior in antiknock properties. As they can be made from low grade oils the saleable yield of gas is increased. There is no reason why the use of hydrogenated gasoline should not become widespread and the way thus opened to the engineer to design engines operating at greater compressions, higher temperatures and higher speeds than at present.

Science News Letter, January 31, 1931

PLANT PHYSIOLOGY-MEDICINE

Effects of Liver Extract On Plants and Man

THE most effective cure for anemia, liver extract, seems to be effective also in checking the pale yellowness of plants grown in the dark, which is a kind of vegetable anemia. Prof Oran Raber of Immaculata College, Pennsylvania, has found. He reported results of his experiments to the American Association for the Advancement of Science in Cleveland.

Plants kept in the dark and fed with liver extract kept their green color much longer than did others not so treated, This suggests, Prof. Raber pointed out, a physiological relationship between hemoglobin, the red coloring matter of the blood, and chlorophyl, the green coloring hatter of plants. The evolutionary relationship between these two pigments has long been a matter of botanical study.

A case of bronchial asthma caused by eating liver and subsequently by taking liver extract has been reported to the American Medical Association by Dr. Edward Matzger of San Francisco. The liver was taken to treat the primary anemia from which the patient suffered.

He had suffered from asthma about 15 years ago, but on moving to the country the asthma improved greatly and remained so even after his return to the city eight years later, complaining of symptoms of anemia. The liver treatment relieved the anemia, but after one week of the liver diet the asthma became constant and persisted until the liver was discontinued. The same thing occurred when liver extract was taken.

Dried hog's stomach made a satisfactory substitute for the liver. It relieved the anemia without causing the asthmatic attacks. The patient was then immunized to rye pollen and house dust and thus freed of the asthma.

Science News Letter, January 31, 1931

ELECTRICITY

New Cable Sends 2500 Letters a Minute

ONE OF the latest advances in telegraphic communication, a cable between Newfoundland and the Azores over which 2500 letters a minute can be sent in one direction or 1400 letters in each direction at the same

time, was described before the American Institute of Electrical Engineers in New York City.

The new cable is a part of the Western Union transatlantic system making land connection at Bay Roberts, Newfoundland, with New York City, and cable connection at Horta, Azores, with German and Italian communications, it was explained by J. W. Milnor and G. A. Randall, telegraph engineers located in this city. The final splice was made in September, 1928.

"This cable combines the advantages of high speed operation characteristic of the new continuously loaded cable, with the facility of duplex, or two-way operation, inherent in the old non-loaded type of cable," the engineers stated. "The duplex speed is several times as high as that of any long cable that has previously been duplexed, and provides the greatest message carrying capacity of any existing trans-ocean cable."

A cable of such great message capacity could not be built until metallurgists had discovered a new alloy of unusual magnetic properties. This alloy, known as "permalloy" in the United States and as "numetal" in England, is composed of nickel and iron and is more than 30 times easier to magnetize than soft iron, the metal which in the past has had the greatest magnetic permeability. Over 50,000 miles of fine wire made of this metal is wrapped around the copper conductor of the cable.

Another unusual feature of the cable which makes possible the sending of messages in both directions at the same time is the fact that there are "artificial cables" in both Newfoundland and the Azores which duplicate exactly the electrical characteristics of the cable actually under the water.

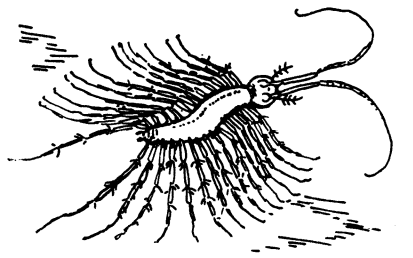
The resistance of the 1341.2 nautical miles of conductor is 4,521 ohms. When a 12-volt battery is used for sending in both directions at 1,400 letters a minute, a current of only six thousandths of an ampere is received at the other end of the line.

Science News Letter, January 31, 1931

ENTOMOLOGY

Nature Ramblings

By FRANK THONE



House Centipede

IT is really a pity that the house centipede is such a wriggly, squirmy object, fit to send any good housewife into a conniption fit, and to make her reach for an annihilating broom at the same time. For it is the melancholy truth that this many-legged little racer across our walls and floors—even our ceilings—is classified as a household pest and yet is one of the most useful of all our domestic animals. Indeed, saving only the equally persecuted spider, he is about the only uninvited housemate of man that earns his keep. He does this as the spider does, by killing and eating the other uninvited guests—flies, roaches and similar nuisances.

Like the hunting spiders that spin no webs, the centipede does most of his stalking at night. Then all the diurnal insects, such as flies, are fast asleep, and the centipede, coursing rapidly around on the ceiling in the dark, literally stumbles on them and nabs them like a flash before they are sufficiently aroused to take flight. And of course the night-prowling vermin are just as much in the dark as he, and a collision is most likely to end in a meal—for the centipede.

In spite of his more or less terrifying appearance, the house centipede is utterly harmless to human beings. He has biting jaws and he has poison, but the jaws are too weak to go through even the tenderest of human skins, so the poison does no harm. And if caught by a curious child, the centipede rarely attempts to defend himself by biting, but prefers to break off several legs—which he can easily do and won't miss much anyway—and thereby escape. Afterwards he grows new ones at his leisure.

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Any soil that will grow a good crop of weeds will support a rose garden.