the content of gold in the Atlantic, and on data prepared by Stewart, might be illuminating. According to Stewart, the plant produces some 15,000 pounds of bromine per day, which is worth, at the currently quoted price, about $5,000. If the plant were operated at the full stated capacity of the two intake pumps, and the metal were completely recovered, the yield of gold per day would be slightly less than 30 cents, a figure whose significance in colloquial usage should not be overlooked.

If Haber's estimate is correct, an economic process for the recovery of gold must be capable of handling and treating not less than 1000 tons (240,000 gallons) of average ocean water to get 1 cent's worth of gold. Although the process devised by Haber was extraordinarily simple and cheap, in principle similar to the purification of public water supplies, the water required a head of 12 feet to flow through the filter at a suitable rate. If such a process were operated on the basis of producing one ounce, or $35 worth, of gold per day (assuming quantitative recovery) the cost of power, at the rate of 0.2 cent per kilowatt hour, needed to lift the necessary quantity of water from the level of the sea to a height of 12 feet, would be perhaps 3 times the value of the gold recovered. This is only the cost of the power to pump the water, without regard to the much larger costs of plant, labor, and chemicals. Even some "free" source of power, such as that provided by tides, could in all probability be used to generate electrical energy worth several times as much as the gold which would be recovered from a hypothetical plant using the same quantity of power.

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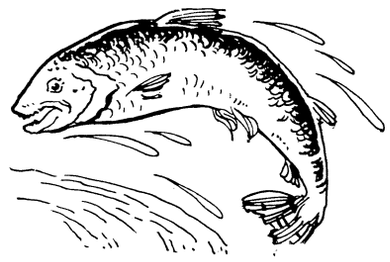
In some coal mines of Illinois and Indiana, dynamite blasting has been discarded in favor of compressed air which releases the coal in larger and more valuable chunks.

PHYSIOLOGY

NATURE RAMBLINGS

by Frank Thone



More Water Than Dust

MORALISTS of the old school were very fond of reminding man of his earthy origin, constantly quoting the admonition of Genesis: "Dust thou art, and unto dust thou shalt return."

As a matter of quantitatively measurable fact, however, man and all other living things are far more water than they are dust. When they perish, only a little of them goes back to the dust of the earth; the greater part evaporates into thin air.

Anyone who has ever had the sorrowful task of attending to the disposal of the remains of a deceased friend who specified cremation rather than burial will recall how little is left at the end of the process. These ashes, or "dust," that represent all that was really solid of a full-grown man, hardly make a double handful.

What becomes of all the rest? Mostly water, evaporated away. The blood fluids alone account for something like three gallons, or between 25 and 30 pounds. The muscles, fat and other soft tissues will yield something like 75 per cent. of their weight in water. The marrow in the bones, and the very bones themselves, ooze water.

But even if you were dried out to a mummy, as desiccated as the late King Tut after 3,000 years in dry storage, there would still be water to extract before you were reduced to the final "dust." For "this too, too, solid flesh" can melt and resolve itself in dew, even as Hamlet wished it might.

Muscle and fat, glands, connective tissue and nerves, are composed mainly of two types of chemical compounds: hydrocarbons and proteins. The hydrocarbons are combinations of hydrogen and carbon and oxygen in varying proportio s. The proteins contain the same elements, plus nitrogen and a trifling amount of sulfur.

When either of these compounds is heated to the point where their structure breaks down, there occurs what chemists call "destructive distillation." To a considerable extent, each oxygen atom pairs off (or rather "triples off," for oxygen is a bigamist) with two hydrogen atoms, to form water. Oxygen from the air comes in and picks up the carbon atoms and the excess hydrogen, forming carbon dioxide and more water. Most of even the dried mummy vanishes as vapor, leaving only the pint or so of solid mineral remains as ashes or "dust."

Chemically speaking, therefore, man is not dust. Man is mostly gas and water.

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Iron-mining activity has given Sweden a polar city of 11,000 inhabitants, at Kiruna.