



Whence Plants, Then?

SALT in the blood has for many years been accepted as evidence that all life originated in the sea. The blood of humans and other vertebrates is astonishingly like sea water in many respects. It has about the same concentration of common salt, sodium chloride. It has the same chemical makeup as sea water in the other salts which it contains in lesser quantities.

The blood of our most distant animal kindred, the invertebrates, also seems to lend support to the same hypothesis. It also has common salt as its preponderating mineral constituent, and it contains the other sea salts as well. This is true both for the invertebrates that still live in the sea, like starfishes and oysters, and for those that live on land or in fresh water, like worms, insects and cray-fishes. Invertebrate blood, however, departs from the sea-water standard of salt concentration more than does the blood of the backboned animals. This is taken by some physiologists as a possible indication of the state of the sea when the ancestors of these creatures first evolved.

But this smooth-running theory strikes a snag when it comes to the land plants. The body-fluids of practically all of them, from the humblest green scum on stagnant pools to the mighty redwoods on the California hills, from waterlilies to cacti, are almost as salt-free as the water that flows from your bathroom tap. Travelers in the desert often slake their thirst by chopping open giant cacti and squeezing their juicy pulp, it is so nearly the equivalent of ordinary fresh water.

A few seashore and salt-desert plants accumulate a good deal of salt in their tissues, but these are always thought of as "salt tolerant," not salt requiring. To the great majority of plants, even the desert-like forms that grow among the salt-bushes along the strand, salt in sea-water concentration is plain rank poison.

True, practically all land plants do contain a little salt. But that apparently is simply because there is some salt in almost all soils, and they take in this minimum indifferently; they seem to be able to get along without it quite easily. Even submerged seaweed, if burned to ash, yield more potassium bromide than they do of its common-salt kin-compound, sodium chloride.

What does this signify? That the first

plants came ashore long before the first animals ventured out, while the sea was still filled with fresh water? That the plants were once salt-filled, too, but somehow lost the "internal sea" that every animal carries about in its veins? That, contrary to most present-day evolutionary assumptions, animals and plants were not derived from the same ancestral cell? Who knows? Any guess is as good as any other!

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MEDICINE

Anemia Remedy Finds New Use in Smallpox Treatment

LIVER, life-saving remedy in pernicious anemia, has been put to a new use in the treatment of smallpox.

Liver extract, injected into the muscles, can check the eruption of smallpox at any stage of the disease, shorten the usual length of its course, and prevent the development of pustules and the consequent scarring and pitting, as well as improving the general health of the patient, Dr. V. Govindan Nair of Vizagapatam College in the Madras Presidency has found.

Smallpox can be prevented by vaccination and by this means is now held in check throughout the civilized world. It still ravages the hinterland of less enlightened countries, however, and there seems to be a reversion to the severe type of the disease in many outbreaks in countries where the mild type usually prevails.

Dr. Nair, assisted by Dr. T. S. Adisubramaniam, medical officer of health, and other noted medical men of India, used the liver extract in treating 28 patients during the recent severe smallpox epidemic in Vizagapatam. The relatively small number of cases is accounted for by the fact that in India the disease is considered of divine origin and many of the natives often refuse treatment of any kind since they think it useless. In his report to the *Journal of the Indian Medical Association* (July), Dr. Nair cautions against deductions because of the small number of patients in his series. He is sufficiently encouraged by his results, however, to consider the method worth further trial by other physicians with better facilities and opportunities.

The injections given by Dr. Nair and associates varied with the age of the patient, the stage of the disease and the type. The treatment was begun at the time the papules were erupting and not more than eight or ten injections were

given in any one case. In modified types of the disease four or five daily injections were given.

The results were the absence of deep pitting and subsequent disfiguration. In addition to the effect on the skin, the patients recovered much more quickly than when other remedies were used and the systemic effects were greatly mitigated.

For many years doctors have striven not only for a specific treatment for smallpox but also for some means of preventing the disfigurement of the deep scarring and pitting which follows an attack; and there is disagreement as to whether any of the various drugs and treatments are really efficacious.

Dr. Nair and his associates believe that the intra-muscular injection of liver extract strengthens the resistance of the patient, stimulates the liver and bone marrow and promotes the coagulation of blood. They confess it is difficult to understand just why these things have such a beneficial effect upon the lesions in smallpox but think that the fact that liver extract is a powerful haemostatic has much to do with it.

The results of this new remedy open many avenues of research. The investigators suggest that it might be used with advantage in chickenpox, measles, vaccination, rubella and scarlet fever.

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23 LANGUAGES

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