

MEDICINE

Marrow Transfer Succeeds

THE SUCCESSFUL transplant of bone marrow from one woman to another has been reported nine months after the operation.

The patient, a 30-year-old woman, was originally being treated for Hodgkin's-like disease, the painless, progressive and fatal enlargement of the lymph nodes, spleen and general lymphoid tissues that often begins in the neck and spreads over the body.

Eventually, the patient's white blood cell and platelet counts began dropping so rapidly that blood transfusions could not keep the count at a safe level. At that time, the patient's sister donated bone marrow from her breast and pelvic bones.

The patient immediately improved clinically and her white blood cell and platelet counts rose steadily. Drs. Irene S. Cade and A. M. Jelliffe of Middlesex Hospital, J. O. W. Beilby and J. W. Stewart, also of Middlesex Hospital, with Dorothy M. Parkin of the Medical Research Council, report in the *British Medical Journal* (Jan. 9).

The scientists frankly expressed puzzlement at the nine-month success of the operation, compared to the few weeks of life usually experienced with human transplants. However, they suggest that several factors may have contributed. First, the bone-marrow was administered within an hour after it was removed from the patient's sister. As a result, the delicate cells were exposed to a minimum of trauma.

The timing of the transplant may also

have been significant, they say. The patient received the new bone marrow 15 days after her marrow had ceased to function. Thus, tissue antibodies that normally fight intrusion by transplanted cells may have declined, permitting the patient to become receptive to the graft.

In addition, the donor was a sister of the patient, and the close relationship probably was an important factor in allowing tolerance to develop, the five researchers explain.

Attempting to explain their success further, they suggest that possibly the patient's mother, who was dead, possessed those antigens (antibody stimulants) which are present in the sister but not in the patient. Therefore, the patient might have developed some tolerance during her fetal development.

In animal experiments, death has followed bone marrow transfusion when the recipient developed antibodies that attacked the donor marrow.

Attempts to graft skin from the sister to the patient failed, demonstrating that the degree of tolerance in the patient is less than normally occurs in identical twins.

Last March, it was reported that five Yugoslav scientists survived successful bone marrow transplant after receiving fatal doses of nuclear radiation the previous October. Each had suffered a shortage of white blood cells. A sixth scientist died.

Science News Letter, January 23, 1960

CONSERVATION

Move to Save Tortoises

THE NEWLY formed Charles Darwin Foundation for the Galapagos Islands is sending an international biological expedition to the Galapagos in an effort to conserve the remaining tortoises there.

A zoologist will establish a research station in collaboration with the Ecuadorian Government's scientists. Grants to support this program have come from UNESCO, the Gulbenkian Foundation and others.

The strange differences between the various tortoises and other fauna on islands in the Galapagos group impressed Charles Darwin when he visited the islands in 1835, and gave him the clue that led to "The Origin of Species" in 1859.

The most famous of all the islands' animals are the giant tortoises. The Spanish word for tortoise, "galapago," gave the islands their name.

Fifteen species or races of tortoises are found there, each with small but vital distinctions from the others.

On some of the Galapagos Islands the tortoises have completely disappeared. On Barrington and Charles Islands they have long been extinct, and it is believed that the Duncan Island species has been wiped

out in the last 50 years. On five other islands tortoises are very rare.

Fortunately, tortoises are still common on Indefatigable and on Albemarle, the largest island in the group, where there are no less than five distinct species. These are believed to have evolved when Albemarle's five volcanoes were separate islands. Although the five peaks have since been united into one island by the rising of the sea bed, they are separated by lava deserts and remain ecological islands.

The giant tortoises are still in considerable danger. They have the ill fortune to be thought good food. Also, their young are collected and sold as souvenirs to tourists on visiting cruise ships.

Another unusual reptile scientists on the expedition will try to save is the marine iguana, which has also developed small interisland differences. At high tide, hundreds of these iguana bask on the lava cliffs of the Galapagos. When the tide goes out, they swim out to feed on seaweed on the exposed flats.

The marine iguana is also in danger of extinction because men kill them for their skins and wild dogs eat them.

The Government of Ecuador is itself convinced of the importance of preservation

work in the Galapagos, but its main problem is enforcement. The presence of biologists resident in the islands and taking a continuous interest in what is going on may be the first step to greater understanding of the evolutionary significance of the Islands' fauna. Also the depredations of persons who have no real idea of the damage they are doing may be checked.

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ARCHAEOLOGY

Big-Game Hunting Once Flourished in U. S.

BIG-GAME hunting once flourished in America. But that era was more than 10,000 years ago.

Evidence of where ancient Americans pursued giant, now-extinct ice-age mammals such as mammoth, mastodon, camel and, later, buffalo, is reported by Prof. Gordon R. Willey of Peabody Museum, Harvard University, Cambridge, Mass., in *Science* (Jan. 8).

The day of the American big-game hunter ended, Prof. Willey reports, after 7,000 B.C. It was not due to loss of interest on the part of the hunters but to change of climate that wiped out the game. After America became warmer and drier, big-game hunting still persisted in the central zones of old continental grasslands. Men still followed buffalo on the North American plains and guanaco on the Argentine pampas.

Finds of projectile points shaped by pressure-flaking, accompanied by a variety of skin-scraping tools, showed that big-game hunters may have lived in Sandia Cave, New Mexico, before 15,000 B.C.

Finds of big-game hunting weapons showed that the sport, or means of making a living, spread over the eastern woodlands of North America, central and northeastern Mexico, Venezuela, the Andes and southern South America and even as far south as the Straits of Magellan.

Science News Letter, January 23, 1960

METALLURGY

Coating for Columbium Protects at 2,200 Degrees

THE U.S. NAVAL Research Laboratory has developed a metallic coating for columbium metal that will protect it against oxidation at temperatures as high as 2,200 degrees Fahrenheit.

Development of the coating is believed to be a first step toward use of this high-strength metal at temperatures that turn iron, nickel and cobalt into soft putty. It may be especially useful for glider vehicles designed to return man safely to earth from an orbit in space.

Using zinc as a starting material, the coating forms a protective layer of complex zinc-columbium oxide that serves as an "envelope" for the columbium metal. The coating is ductile and plastic at high temperatures and "heals" itself if bare spots develop, reports the *Naval Research Reviews* (Dec., 1959).

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