

BIOCHEMISTRY

Use B-12 To Study Red Cell Production

► THE REASON why some people are unable to manufacture red blood cells normally is being sought at the Los Angeles Veterans Administration Center and the University of California at Los Angeles Medical School through the use of radioactive vitamin B-12.

This vitamin is known to be essential in the blood building process. However, without the aid of some body substance, known as the intrinsic factor, B-12 is not utilized, resulting in pernicious anemia.

Because intestinal bacteria also produce vitamin B-12, it has been difficult to trace experimentally administered B-12. However, with the use of the radioactive form, which can be traced with radiation detecting instruments, the stomach has been fairly well established as the source of the intrinsic factor.

When the radioactive vitamin was administered to persons whose stomachs had been removed because of cancer, it was found that none was absorbed. However, with simultaneous administration of juices secreted by stomachs of healthy persons, the B-12 was absorbed normally.

Actually only a millionth of a gram of vitamin B-12 daily is required to maintain normal blood building activity. However, without aid of some substance in stomach secretions, the vitamin apparently cannot negotiate the small fraction of a millimeter across the intestinal lining to the bloodstream.

Participating in the study of radioactive vitamin B-12 are Drs. James Halsted, Marian Swendseid, Marvin Gasster and Ernst Drenick.

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PSYCHOLOGY

Drawing of Self Reveals Failings of Old Age

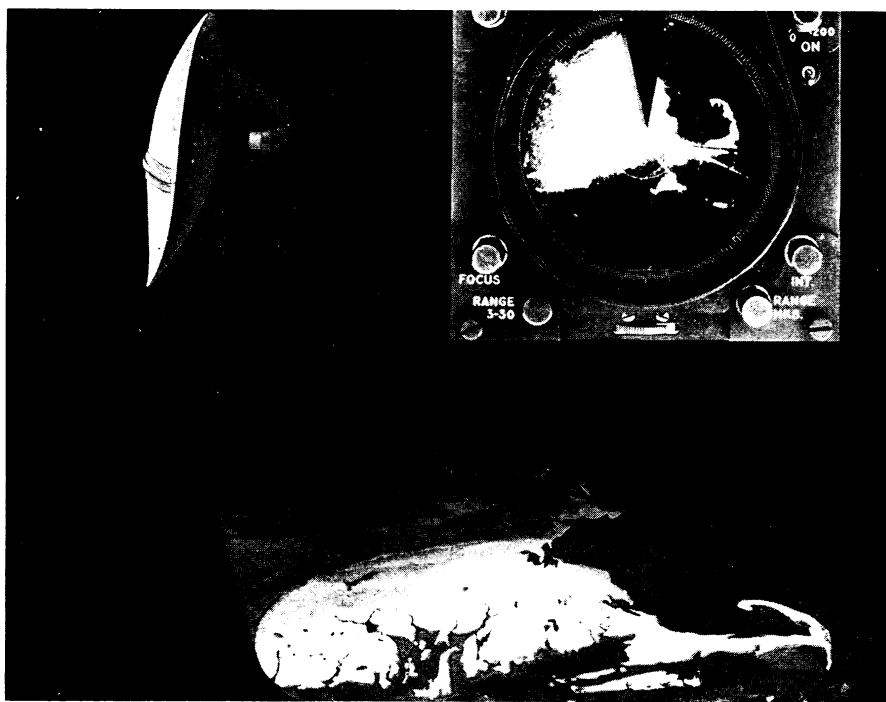
► WHEN AN old person takes a few minutes to draw a picture of himself as he would appear in a full-length mirror, he may reveal to a psychologist a true picture of his intactness or of the breakdown of personality that comes with age.

Psychologists at Teachers College, Columbia University, New York, compared such drawings made by 77 young graduate students with those made by 104 people from centers for old people.

The drawings of the old people contrasted with those of the students, Drs. Irving Lorge, Jacob Tuckman and Michael B. Dunn reported to the American Psychological Association meeting in New York.

"They are characterized by incompleteness, lack of integration, one or two dimensionality, lack of proportion, bizarreness and evidence of inadequate motor coordination," the psychologists found.

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PILOT'S RADAR—Artist's conception of the way U. S. Air Force's airborne Sperry radar APN-59 reproduces what the "turtle shell" antenna sees. The area shown is the region near Cape Cod, Mass.

TECHNOLOGY

Radar Maps Ground

► A RADAR set on display at the National Air Show, Dayton, Ohio, over Labor Day weekend, warns U. S. Air Force pilots of high mountain peaks, storms, tall buildings and nearby airplanes.

It presents a map of the area under the planes, displaying it on a five-inch screen.

Produced by Sperry Gyroscope Company for the Air Research and Development Command, the radar works at any height up to 50,000 feet, weighs only 150 pounds, and uses an 18-inch "turtle-shell" antenna that compensates for the pitch and roll of the plane.

Tests showed the set could "see" all around Lake Erie at once. It clearly showed Buffalo and Detroit, Toledo and Toronto, 250 miles apart at opposite ends of the lake.

The radar operates in the X-band, or 10,000-megacycle band of the spectrum.

A wide choice of range scales for the viewing screen can be selected by the operator, for close-up enlargements variable from three to 30 miles; or fixed ranges of wider areas at 50 miles, 100 and 240 miles.

Areas shown may be oriented to current heading of the aircraft, or to any desired compass bearing for exact measurement of drift.

One or more radar indicators may be operated with the system, and for larger planes an optional 30-inch antenna also is being produced.

Sub-miniature tubes and other miniature components are used so that the complete indicator and synchronizer units, including a five-inch radar screen, are contained within a compact aluminum case of only 70 cubic inches.

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ENGINEERING

Build New Laboratory With Wrenches Only

► A TWO-STORY laboratory is being built in Ann Arbor, Mich., by workers equipped only with wrenches. It will take weeks to construct, rather than the months required for a conventional building of the same size.

The structure uses a new architectural concept, the Unistrut Space Frame System of construction, which allows building unusually strong roof frameworks by introducing a third dimension of reinforcement.

Conventional roofs rest on beams or trusses running in two directions between walls. The space frame concept uses diagonal struts that permit stresses to be distributed in three directions.

The new building will be known as the Research Laboratory of the College of Architecture and Design of the University of Michigan.

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