• Books of the Week •

➤ HANDBOOK OF PLASTICS — Herbert R. Simonds and Carleton Ellis—*Van Nostrand,* 1083 p., illus., $10., sixth printing.

➤ MANOMETRIC TECHNIQUES AND RELATED METHODS FOR THE STUDY OF TISSUE METABOLISM—W. W. Umbreit and others —*Burgess,* 198 p., paper, illus., $3.50.

➤ PROCESS EQUIPMENT DESIGN—Herman C. Hesse and J. Henry Rushton—*Van Nostrand,* 580 p., illus., $7.50.

➤ THE ROLE OF HIGHER EDUCATION IN WAR AND AFTER — J. Hillis Miller and Dorothy V. N. Brooks—*Harper,* 222 p., $2.50.

➤ THE SOUTH AMERICAN HANDBOOK, 1944, a Year Book and Guide to the Countries and Resources of South and Central America, Mexico, and Cuba—Howell Davies, ed.—*H. W. Wilson,* 798 p., illus., $1.25.

➤ TELESCOPES AND ACCESSORIES—George Z. Dimitroff and James G. Baker—*Blakiston,* 309 p., illus., $2.50. (The Harvard Books on Astronomy).

Science News Letter, March 3, 1945

MEDICINE

Arthritis Findings Help Explain Pain, Tenderness

➤ NEW FINDINGS in rheumatoid arthritis which "offer an explanation of the pain, tenderness, nutrional changes and muscular wasting generally seen in arthritis patients are reported by medical scientists of Detroit (*Science,* Feb. 23).

The doctors signing the report are Drs. Hugo A. Freund of Harper Hospital, Gabriel Steiner of Wayne University College of Medicine, Bruno Leichentritt of Eloise Hospital, and Maj. Alvin E. Price of the Army Medical Corps, formerly of Detroit and now with the 17th General Hospital.

The findings consist in little knots or nodules widely distributed in the skeletal muscles and the peripheral nerve trunks. These little knots are inflammatory in nature. They are found in very small amounts of muscle tissue taken at random from various parts of the body of arthritis patients.

The large numbers found led the doctors to conclude that there must be an enormous number of them in an active case of rheumatoid arthritis. Some of the muscle nodules were big enough to be seen with the naked eye but others were so tiny they could only be seen with a microscope.

The nerve nodules were found in the connective tissue sheath surrounding the nerves. They were often removed from involved joints and in nerves not connected with joints.

The frequency of signs suggesting nerve involvement in rheumatoid arthritis and the lack of information on this in previous scientific reports led the doctors to make a special study of the nerves in arthritis patients. Discovery of the inflammatory nodules in the muscles was made when they had an opportunity to study the amputated legs of a young woman suffering from rheumatoid arthritis. Specks of muscle punched out of patients who did not have arthritis showed no signs of these nodules.

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HORTICULTURE

Roses Keep Petals Longer If Cut in Late Afternoon

➤ DON'T CUT ROSES early in the morning, while the dew is still fresh on them, if you want them to last long. This advice, directly contrary to traditional practice, is based on experiments performed in Ithaca, N. Y., by Joseph E. Howland, Cornell University floriculturist.

Using a thousand roses, in tests extending over a year's time, Mr. Howland found that roses cut in the afternoon last as much as 10 hours longer than those cut in the morning. Roses keep nearly eight hours longer when cut at 4:30 p. m. than when cut at 8 a. m., he discovered. During hot weather, the afternoon cutting served to increase the keeping time to nearly ten hours longer.

This is true because leaves make sugars when the sun shines. The later in the day the stems are cut, the longer they should keep because of the increased sugar content, which is highest around 4:30 p. m.

The Cornell investigator became interested in the problem of making roses last through similar research on cutting hay at the university. It was found that cutting in the late afternoon resulted in more hay of higher quality than when cut in the morning with dew on the hay.

Short-stemmed roses with only a few leaves keep just as long as long-stemmed ones with many leaves, Mr. Howland found.

The history of roses supports the new evidence. As early as 1908, Mr. Howland says, French investigators discovered that the keeping quality of cut flowers was not improved by any chemical used in the water, unless it was used in combination with sugar. Even today florists sell "sugar powder" to prolong the life of roses, but up to now they did not know why it worked.

Sugar alone cannot be used in the water because bacterial growth would be increased, and possibly plug water-conducting elements in the stem of the cut flower. A chemical which prevents rapid bacterial growth in the water must be used with the sugar. A large supply of sugar in the leaves and petals helps prevent their premature fall.

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