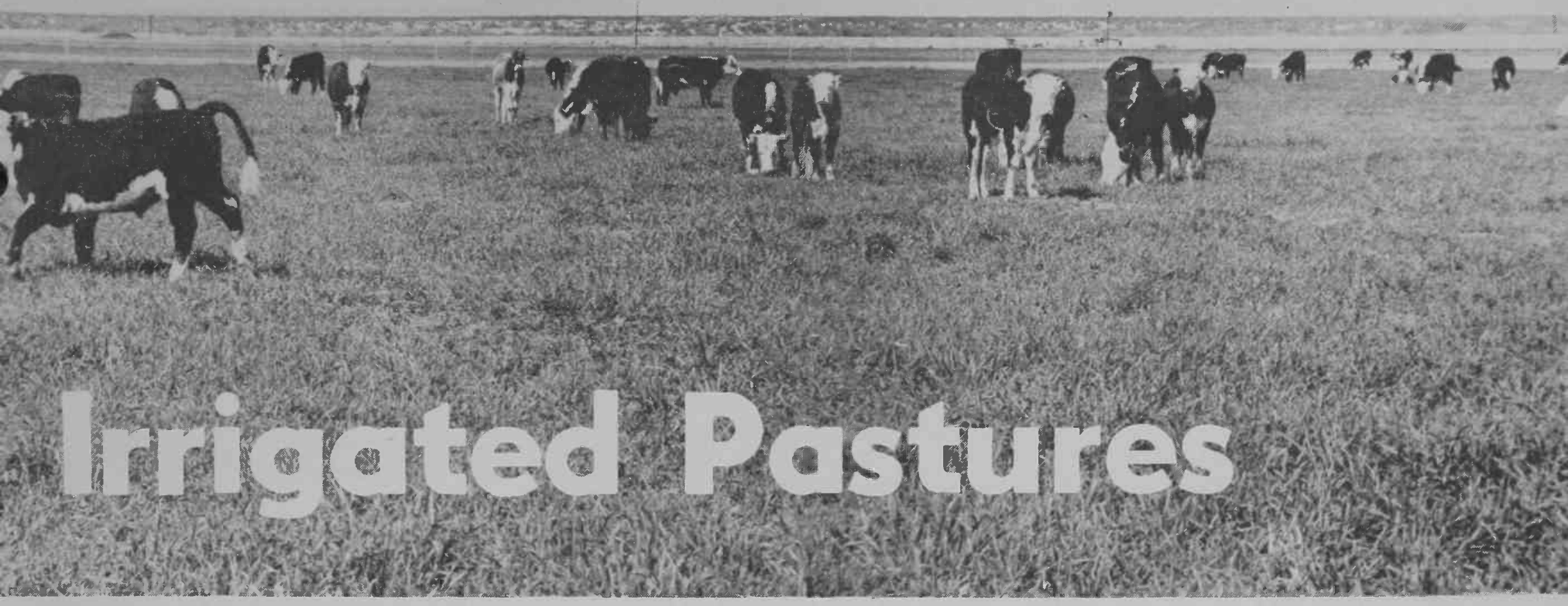

Irrigated Pastures

The picture above is a barley pasture on the T. G. Griffin Ranch at Sahuarita, Arizona. (Photo by S. C. S.)

By E. B. Stanley

Pasture in the irrigated farming areas of Arizona is obtained almost exclusively from the principal forage crops—alfalfa and the small grains—barley, oats, wheat, and Sudan grass. Cotton, grain sorghum and vegetable fields are an additional source of "clean-up" pasturage.

A year-long grazing season enables maximum developments of these crop lands and a quarter of a million cattle and sheep derive a large part of their subsistence from irrigated pasturage.

Range sheep men move their flocks to the Salt River and Casa Grande valleys in October where they are maintained largely on alfalfa and winter grains during the lambing season and until the lambs are marketed in April. Then the ewes are returned to their summer ranges. Cattle numbers are likewise heaviest throughout the winter and spring months, although some grazing is carried on through the summer.

In order to determine which types of pasture are the most practical the departments of Animal Husbandry and Agronomy conducted tests on the value of certain pasture crops in terms of animal production. Close observation of pasturing practices and the experiences of farmers and stockmen have provided additional material. A summary of information from these sources gives a fair appraisal of irrigated pastures in Arizona.

Carrying Capacity

The number of animals a pasture will adequately provide for is known as the carrying capacity. It is measured in terms of "animal units"—one animal unit being the feed requirements of a 1000-pound growing beef animal. A 300-pound growing calf needs one-half of the feed required for the 1000-pound animal.

Irrigated pastures in Arizona have carrying capacities of from .5 to 1.5 animal units or more per acre for the pasture season.

The average animal unit days per acre during one pasturing or rotation period and the intervals of time required for regrowth between rotations provide a basis for figuring carrying capacity. For example, a grass-legume pasture capable of making regrowth in 20 days during the warm months may be grazed for 9 days. Then it is allowed to regrow and is irrigated twice during the next 20 days. If 1 acre furnished 45 animal unit days every 30 days, this would be equal to a carrying capacity of about 1½ head of 1000-pound beef cattle.

Pasturing records for the past 10 years in Arizona give a reliable comparison of the principal green feed crops. As a group, alfalfa and the alfalfa-small grain pastures produced an average of 61 animal unit days per acre in each rotation, with a daily gain of 1.1 pounds. Grass-legume mixtures produced 45 animal units days with 1.1 pound daily gains. Barley pasture yielded 52 animal unit days, with 1.2 pound gains and Sudan produced 59 animal unit days, with 0.7 pound daily gains.

Production for the entire grazing season or calendar year will depend upon the number of rotation periods. These in turn are determined mainly by the regrowth intervals. For alfalfa-barley pasture, 45 to 60 days are required in the winter for another rotation; alfalfa takes about 50 days in winter and 30 days for summer, grass-legume mixtures take 30 to 40 days in winter and 20 in spring; barley, 40 days in winter, 20 in spring and Sudan grass takes 25 days in summer.

A comparison of pastures at the Salt River Valley Experimental Farm near Mesa, during the years 1945 and 1946 gave the following results: Alfalfa 382-564 animal unit days per acre; grass-legume mixtures 283-389 days, and temporary pasture of barley and Sudan, 224 to 358 animal unit days.

According to these figures, beef cattle gains amounting to 520 pounds can be realized each year from an acre of grass-legume pasture and 300 pounds from barley or Sudan, without figuring in supplemental feed.

The perennial grass-legume mixtures have not proved equal to alfalfa, barley and Sudan grass for livestock production in the irrigated areas of central and southern Arizona. But some species show promise and a simple mixture may be found to complement or supplement alfalfa, barley and Sudan.

In the intermediate and high elevations, cool weather grass-legume mixtures already are furnishing economical livestock feed where there is adequate water and where good soil fertility is maintained.

Alfalfa Soilage

Some stockmen are questioning the practicality of pasturing irrigated crops, especially alfalfa. The development of suitable harvesting machinery for handling soilage may well lead

(Please turn to Page 11)

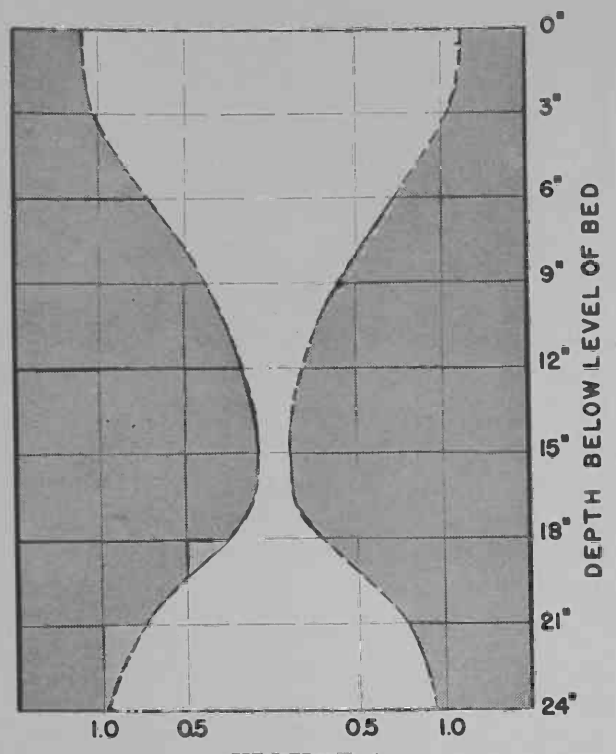

FIGURE 1.

Graphical representation of water percolation rates found in soils where severe yellowing occurred. Note the excellent percolation rate in the upper 6 inches and the severely retarded rate between the 12 to 18-inch depth.

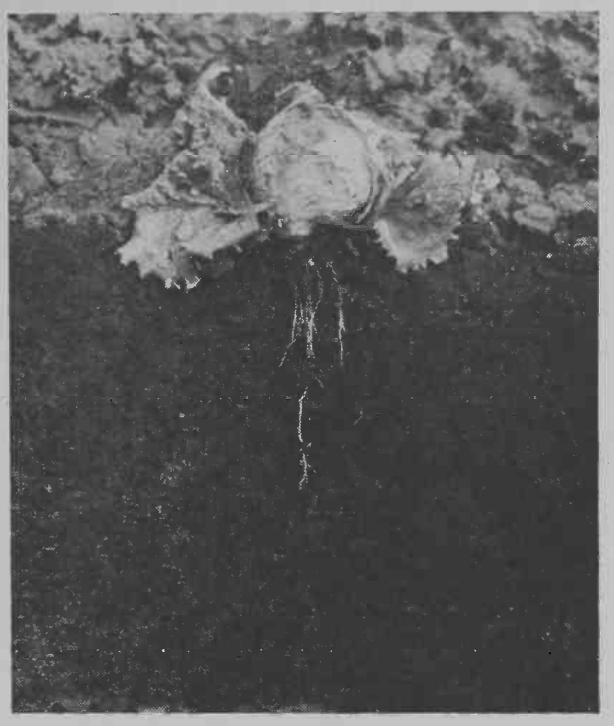

FIGURE 2.

Lettuce yellowing related to unfavorable soil-root conditions. Compare limited root systems with extensive root system in Figure 4. This condition is related to soils with the compacted zone shown in Figure 1.

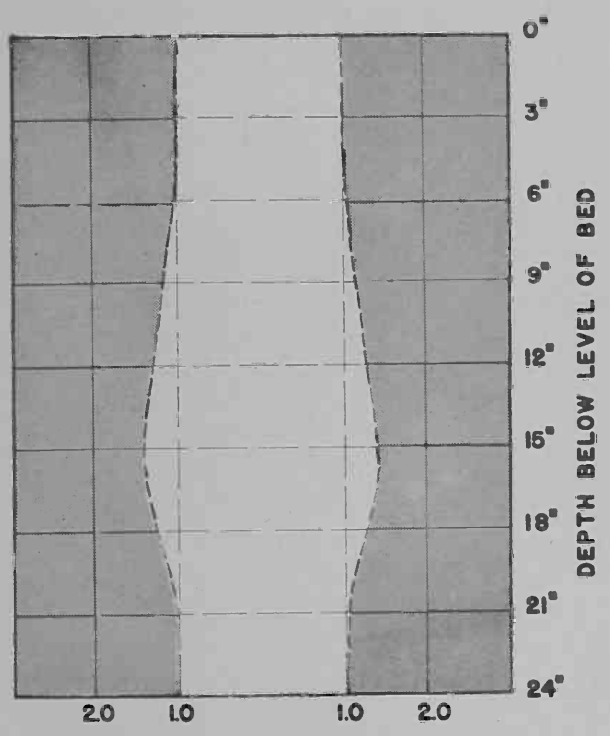

FIGURE 3.

Graphical representation of water percolation rate found in soil where no yellowing occurred. Note the excellent percolation rate throughout entire depth.

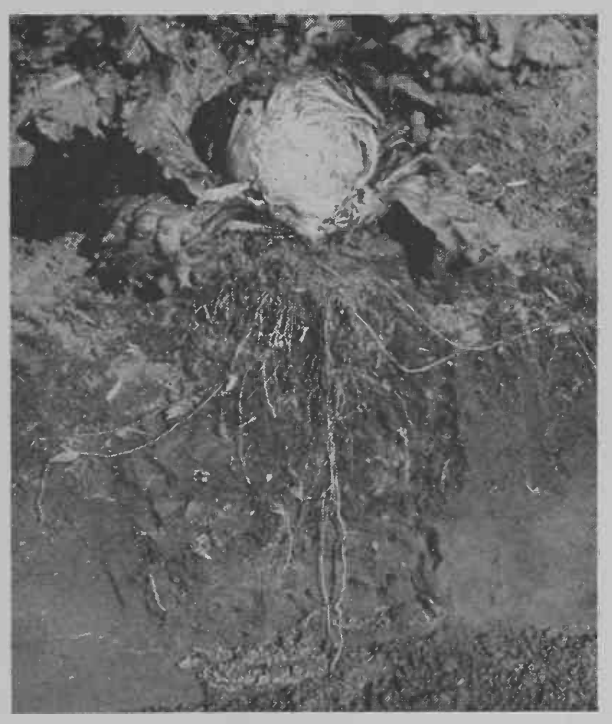

FIGURE 4.

Healthy spring lettuce, yellow free, grown under favorable soil conditions as indicated in Figure 3. Compare healthy root system with the limited root system in Figure 2.

Daily (Except Sunday)

KRUX, Glendale, 6:55 a.m.—Farm Front—Maricopa County Extension Agent.

Sundays

KOY, Phoenix, 9:05 a.m.—Demonstration Garden (County Agent) Program.

Mondays

KYMA, Yuma, 7:00 a.m.—On the Farm Front.

KCLS, Flagstaff, 8:45 a.m.—Your County Agent Reports.

Wednesdays

KYUM, Yuma, 6:45 a.m.—Yuma County Agricultural Extension Service Radio Program.

Fridays

KCKY, Coolidge-Casa Grande, 4:30 p.m.—Pinal County Farm and Home Program.

Saturdays

KGLU, Safford, 1:15 p.m.—Stepping Along With the Agricultural Extension Service.

KOY, Phoenix
KYMA, Yuma
KTUC, Tucson
KSUN, Bisbee
} 12:00 to 12:30 p.m.

Arizona Farm and Ranch Hour, presented by the Radio Bureau, University of Arizona, and the College of Agriculture.

Mondays and Fridays

KGPH, Flagstaff, 9:45 a.m.—Coconino County Farm and Home Program.

How About Horticulture?

(Continued from Page 2)

as salesman.

Teaching positions in horticulture and related educational work are available in colleges, federal and state agricultural extension departments and to a limited extent with private concerns.

Landscaping includes the laying out, planting and care of plants for home grounds, golf courses, parks and playground areas, for federal, state and county departments.

Business type jobs include the buying and selling of fruits, vegetables and ornamental plants, seeds, horticultural equipment, fertilizers, insecticides and other supplies.

Irrigated Pastures

(Continued from Page 3)

to the adoption of this practice. It provides for complete utilization of the crop, stops soil packing, reduces bloat danger, increases crop yield, and requires less fencing. Cattle get closer attention and cleaner water at less cost, and maintenance costs for irrigation ditches and borders are lower. Interruption of the green feed production during the winter season, especially from December 15 to January 30, is a problem both in grazing and in soilage practices. However, a pen feeding unit offers the cattle feeder a means of adujsting to variations in feed supply. Such facilities also allow for an increase in the capacity of the operating unit and give the livestock man more freedom in purchasing, feeding and marketing his livestock.

—E. B. Stanley is Head of the Department of Animal Husbandry.