of the art as well as those specifically related to each of the various branches have been assembled and printed under one cover. This glossary is the result of more than twelve years' work of a sectional committee of 46 members having 18 subcommittees drawn from available specialists. More than 300 individuals have given material assistance and many others have assisted in specific instances. The thirty-four organizations represented on the sectional committee include the national engineering, scientific and professional societies, trade associations, government departments and miscellaneous groups.

AN extensive list of institutions, societies and research workers in the pure and applied plant sciences in Central and South America has been prepared by the editors of *Chronica Botanica,* in cooperation with the Division of Agriculture of the Office of the Coordinator of Inter-American Affairs, Washington. It has been published in *Chronica Botanica,* Vol. 7, Nos. 2 and 3 (March and May, 1942).

DRIVEN out of China by the advance of Japanese troops, the California College in China has come to the United States and is again functioning at the University of California at Berkeley. It is cooperating with the University Extension Division under the direction of President Robert Gordon Sproul and a faculty committee headed by Peter A. Boodberg, chairman of the department of Oriental languages. President W. B. Pettus, head of the Chinese college for the past twenty-five years, has lived in China more than thirty-five years. In Peiping the campus included fifteen buildings for classes, dormitories and a library. Much of the library, considered the finest library on China in the Orient, was rescued and is now in the collection of the University Library. Work at the university was made possible by grants from the Rockefeller Foundation and the Harvard-Yenching Institute. Among the trustees of the California College in China are President Sproul, David P. Barrows, chairman of the department of political science of the University of California, and James K. Moffitt, regent of the university.

ACCORDING to the *Journal* of the American Dental Association, United China Relief received a cablegram late in April announcing the safe arrival in India of R. Gordon Agnew, Canadian missionary, well known in this country for his work on the bacterial and dietary aspects of dental caries. Dr. Agnew, who was returning to his post at West China Union University at Chengtu, Szechwan Province, near Chungking, took with him from the United States twenty-three cases of surgical and dental instruments, a third of which were consigned to the medical relief corps of the Chinese Red Cross, supported by United China Relief. The instruments, valued at $12,000, and originally consigned to Rangoon, will reach China from India by a road that can be traveled only by mules.

DISCUSSION

METHODS OF DETECTING MILD CASES OF VITAMIN A DEFICIENCY

IN 1939 Booher, Callison and Hewston[1] asserted that "impaired dark adaptation as measured with the visual adaptometer was the earliest definite ocular abnormality observed as a result of vitamin A deficiency" experimentally induced.

In 1941 Kruse,[2] reporting on the biomicroscopic detection of conjunctival manifestations of avitaminosis A, stated that ordinarily xerosis conjunctivae probably precedes night blindness and recommended the biomicroscopic examination as a simple, convenient, objective method of detecting avitaminosis A.

Recently Miss Callison,[3] calling attention to the seeming discrepancy between the two sets of observations, argues that dysadaptation precedes conjunctival changes; indicates tacitly that the test for adaptation is the more reliable and preferred routine procedure for detecting avitaminosis A; and casts doubt on the reliability of the biomicroscopic method for that purpose.

Miss Callison's assertion that slit-lamp examination by ophthalmologists before and during impaired adaptation in her subjects and after their recovery revealed no evidence of abnormality in the conjunctivae carries the implication that they had consciously been looking for the conjunctival changes described by Kruse as characteristic of avitaminosis A. But they made their observations in 1938. And Kruse did not publish his description until 1941. It is not to be expected that they would recognize or regard changes as abnormal which in 1938 were generally accepted as normal or unrelated to avitaminosis A and which only since have been shown to be pathological and characteristic of avitaminosis A.

Indeed, if they were judging by keratinization of epithelium, as stated in their original report, it is

[1] L. E. Booher, E. C. Callison and E. M. Hewston, *Journal of Nutrition,* 17: 317, 1939.
[2] H. D. Kruse, *The Milbank Memorial Fund Quarterly,* 19: 207, 1941.
[3] E. C. Callison, SCIENCE, 95: 250, 1942.

clear that they were not diagnosing by the criteria later described by me. Nowhere in my paper is keratinization mentioned as an essential diagnostic criterion. Rather, certain definite changes of the conjunctiva were shown to be characteristic of avitaminosis A. Certainly then the biomicroscopic examinations reported in Callison's papers do not warrant the conclusions that night blindness was present in her subjects without conjunctival changes and that the biomicroscopic method is not a reliable method of detecting mild avitaminosis A.

Miss Callison raises the issue whether applying a method during the production of an uncomplicated experimental avitaminosis or during the specific treatment of the naturally occurring avitaminosis is the better test of its reliability. Either is acceptable, particularly with the support of collateral evidence. But beyond this, if a method is to be used routinely in detecting mild cases of avitaminosis, it must be applicable to the diversified natural conditions encountered in surveys of population groups.

In three surveys, routine examination for dysadaptation has failed completely to detect mild or early avitaminosis A. The data on the prevalence of avitaminosis A yielded by the method are entirely at variance with the results from diet studies, published by the Bureau of Home Economics. Furthermore, many cases of seeming dysadaptation have been found to have no basis in avitaminosis A.

In contrast, in more than one hundred individuals showing no impaired adaptation, gross or microscopic changes were present in the conjunctivae and slowly disappeared under administration of vitamin A. This evidence supports the conclusions that under ordinary conditions conjunctival changes probably precede dysadaptation in avitaminosis A and that examination of the conjunctivae is a reliable method of detecting avitaminosis A.

H. D. KRUSE

MILBANK MEMORIAL FUND

RUBBER ANALYSIS OF PLANTS IN SOUTH CAROLINA

IN 1930 and 1931 some plants growing in the vicinity of Clemson, South Carolina, were collected and analyzed for the presence of rubber. The plants were collected and identified by Mr. M. A. Rice, the chemical tests being made by the other two authors. The results are presented below. The figures given at the right show the percentage of rubber in each case. All determinations were made on a basis of air-dry weight.

Name of Plant	Per cent.
Ambrosia trifida L. Great ragweed	0.27
Amsonia Tabernaemontana Walt. Amsonia	0.26
Apocynum cannabinum L. Indian hemp	
No. 9: leaves	1.16
" 17:	0.73
Asclepias tuberosa L. Butterfly weed	
No. 5: stems	0.34
leaves	2.20
" 18:	2.21
" 22:	1.80
Asclepias sp. Milkweed	
No. 7: stems	0.38
leaves	1.93
" 10:	1.55
Asimina triloba Dunal. Papaw	0.54
Aster sp. Wild aster	1.03
Broussonetia papyrifera (L.) Vent. Paper mulberry	0.60
Cacalia atriplicifolia L. Pale Indian plantain	1.75
Decumaria barbara L. American decumaria	0.08
Erigeron annuus (L.) Pers. White-top	
Stems	0.09
Leaves	0.69
Eupatorium purpureum L. Joe-pye weed	0.45
Euphorbia corollata L. Flowering spurge	
Stems	0.26
Leaves	0.53
Euphorbia nutans Lag. Spotted spurge	0.26
Euphorbia sp. Spurge	0.70
Helianthus atrorubens L. Purple-disk sunflower	0.68
Lactuca sagittifolia Ell. Arrow-leaved lettuce	0.20
Lactuca Scariola L. Prickly lettuce	
No. 44	0.43
" 45	0.34
Lonicera japonica Thunb. Japanese honeysuckle	0.50
Morus rubra L. Red mulberry	1.02
Oxydendrum arboreum (L.) DC. Sourwood	0.24
Parthenium integrifolium L. American fever-few	1.05
Passiflora incarnata L. Maypop	0.25
Pyrrhopappus carolinianus (Walt.) DC. False dandelion	
No. 1: whole plant	0.51
" 2: stems	0.45
leaves	0.60
roots	0.61
Rhus glabra L. Smooth sumach	
Stems	0.38
Leaves	0.30
Robinia hispida L. Rose acacia	
Stems	0.29
Leaves	0.44
Sambucus canadensis L. Common elder	1.27
Silphium compositum Michx. Rosin-weed	0.74
Smilax sp. Greenbrier. (Material from a correspondent)	
No. 39: flesh of berries	1.85
" 41: flesh of berries	3.65
" 42: flesh of berries	2.05
Solidago spp. Goldenrod	
No. 3: stems	0.12
leaves	0.69
" 12: whole plant	0.89