each in the third group the same daily quantities of both of the above compounds. Achromotrichia occurred in these three groups as well as it did in the larger basic experiment with the same difference in the reaction of males and females.

These observations imply that the achromotrichia produced in C-57 mice by certain dietary deficiencies may depend also on hormonal factors.

The report of Forbes[2] that a pellet containing estrogenic substances implanted subcutaneously produced local pigmentation of the fur in albino rats, while testosterone diproprionate failed to do so, is of interest in connection with these results.

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CONGENITAL AND ACQUIRED ANOMALIES OF COLOR VISION

APROPOS of recent criticism in these columns of the ambiguous concept of "color blindness,"[1] subsequently endorsed and extended by Loken and Dunlap,[2] I find after careful consideration nothing in common between the assumptions and deductions of the latter and my own.[3]

Controlled experimentation over a period of months and years will be necessary before the existence of congenital as distinct from acquired types of color anomaly can be contested.[4] Such experimentation should be carried on by responsible trained workers, combining medical with psychological techniques. Adequate insight into the uses and shortcomings of the various color tests available, based on five or more years of experience with a variety of cases, is indispensable. Ability to distinguish minor from major anomalies, a knowledge of the relations of day and night vision, of the effects on the color sense of fatigue, of excessive use of nicotine, alcohol and other drugs, and of various infections are also essential.

Promotion of the use of drugs or vitamins to enable an applicant for aviation or naval service to "pass a test," where knowledge of the permanence of the "cure" is not yet available in the opinion of the writer is little better than coaching students to cheat in a qualifying examination. In the present emergency, when perfection of vision is vital in submarine, aviation and naval branches, and when one of our opponents is undoubtedly possessed of unusual visual equipment, the ill effects of such a line of action are incalculable.

There is nothing in common between the Loken-Dunlap position and my own.[5]

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2 T. R. Forbes, *Endocrinology*, 30: 465, 1942.

1 E. Murray, SCIENCE, 96: 2484, 133–5, August 7, 1942.

2 K. Dunlap and R. D. Loken, SCIENCE, 96: 2489, 251–2, September 11, 1942.

3 *Idem.*, SCIENCE, 95: 2474, 554 *ff.*, May 29, 1942.

4 See Köllner, "Die Störungen des Farbensinnes," 1912; or other ophthalmological texts.

SPROUTING OF SUMAC IN DRY STORAGE

SPROUTING of adventitious buds in logs or twigs of woody species freshly cut and left in contact with moist earth is said to be common in tropical regions and not rare in temperate climates. The remarkable case of a sprout on a mulberry log in England after six years of dry storage has been recorded by the late Sir A. W. Hill,[1] but in that instance the sprout appeared after the log had been used as a prop with one end in contact with moist earth. The scriptural record[2] of the sprouting of the rod of Aaron has, of course, been familiar to many generations of men, but comparable cases in North America are not so well known. A recent development of sprouts on a stored log of staghorn sumac (*Rhus typhina* L.) although a slower proceeding than that of the biblical account is so striking as to seem noteworthy:

A sumac tree 5 inches in diameter at the base and reaching over 20 feet in height growing in the writer's yard (elevation, 320 feet) in Arlington County, Va., was cut down on September 1, 1941, and the log 12 feet long stored for curing as lumber in a dry unheated shed, where it had no direct contact with moisture for the next eleven weeks. After two weeks a number of buds and small sprouts were observed, chiefly on the basal half of the log. Four weeks later all except two of the sprouts had aborted. The larger sprout, then reaching eleven inches in length, originated at a point fifteen inches from the base of the log; the other, but 3 inches long, was at a point five feet from the base. After five more weeks, *i.e.*, eleven weeks after the log had been cut, but one sprout, the lower one, remained, it having by that time reached sixteen inches in length with a maximum diameter of seven sixteenths of an inch. By this time, November 17, some of the leaves had begun to wither at the tips, but whether from dryness or from the effect of cold was not readily determinable.

It does not seem profitable here to discuss at length the means whereby the sumac stored sufficient water for the eleven weeks' growth and transpiration. But it may be pertinent to point out that the much split

5 E. Murray, *Psychol. Bull.*, 39: 165–72, March, 1942.

1 A. W. Hill, *Ann. Bot.*, 39: 210–211, ill., 1925.

2 Numbers, Chapter 17.

base of the log should have been conducive to its desiccation and that certain abrasions of the bark were self-varnished by a lac-like exudate. This gum might well have been a factor in preserving within the bark much of the supply of water needed for the life of the sprouts.

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CORRECTION

I AM indebted to Eugene S. McCartney for calling attention to an error in my article on "The use of generic names as common nouns," SCIENCE, Vol. 96, p. 252. *"Pelomyxa carolinensis,"* line 13, should be omitted, for "carolinensis" is not a noun in the genitive case, but an adjective in the nominative case.

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SCIENTIFIC BOOKS

ASTRONOMY, MAPS AND WEATHER

Astronomy, Maps and Weather. By C. C. WYLIE. x + 449 pp. Harper and Brothers.

AT the request of the Army Air Corps Flying Training Command, Professor Wylie has written this book for use in college pre-flight training courses. Because of the special demands of war-time training, the general plan differs radically from that of any of the older texts. After a general introduction to positional astronomy and to some of the basic precepts of meteorology and weather forecasting, the student is acquainted with the whys and wherefores of map-making. Then follow chapters on time and on celestial navigation and the book closes with a 150-page condensation of the material usually treated in our pre-war courses in descriptive astronomy.

In judging this book, the reviewer must bear in mind that, because of war needs, the writing was done under pressure. Among the good points of the book are the fine series of fourteen star maps and the very readable and instructive chapters on meteorology. One may congratulate the author on his well-balanced summary of astrophysics and stellar astronomy in the concluding chapters. But because this book is one of the first of the texts for a college course in science especially adapted to war-time needs it becomes necessary for the reviewer to do more than pass it by with a brief notice.

Does the book provide the student who is about to enter the Army Air Corps with such training as should prove especially beneficial to him? I fear that it only succeeds part way in this respect. In such a text the main emphasis should be on the celestial sphere; on the basic principles of optics employed in the construction and design of the sort of equipment that the student will use later; on the motions and shape of the earth and the art of map-making; on the principles of weather forecasting; on the measurement of time; and on the theory and practice of celestial navigation. Professor Wylie treats of most of these subjects, but there is in addition so much extraneous material that many a student will probably feel that he is wasting his time. For example, the space devoted to telescopes (Chapter III) could have been used to greater advantage if the author had confined himself closely to such simple optical instruments as are in daily use by aviators. Or again, in the chapter on maps one would have liked to see more than two and a half pages on map projections; this chapter would have gained much if a few typical Mercator charts and maps on the Lambert Conformal Projection could have been reproduced.

To this reviewer the least satisfactory chapter is the one on "Time." The subject of time is traditionally one that vexes the newcomer to the field. Professor Wylie's treatment of the subject fails in two respects. First, because much emphasis is placed on sidereal time. The whole trend in navigational practice is away from the use of sidereal time. The Nautical Almanac and the Air Almanac alike are both so arranged that it is unnecessary to use sidereal time in standard navigational calculations. We should not burden our beginning students with sidereal time; the subject had best be omitted entirely. My second objection is that far too little emphasis is placed on numerical applications. Our students need persistent practice in doing simple arithmetical problems. In the air, as well as on the sea, speed and accuracy in calculations are both essential. A student can not acquire good computing habits overnight. For the duration of the war simple and exact methods involving practical calculations must replace our former descriptive methods of the teaching of science.

The chapter on "Celestial Navigation" suffers from defects similar to those in the chapter on "Time." There is little reason why it should not have been expanded to three or four times its present length. One might object that this could have been done only at the expense of the concluding eight chapters on descriptive astronomy. All to the good, I would say. It is clearly the main function of a course in war-time astronomy to serve future aviators, naval officers and