DISCUSSION

LIGHT EYES AND GLARE SENSITIVITY

IT has been noted that light-eyed persons can see less well under low illumination than dark-eyed persons.[1] It is also well known that albinos who lack retinal pigment see poorly not only in the daytime but also at night. They are particularly sensitive to bright illumination. One investigator[2] has found that Negroes see from two to four times better than whites at night. These findings would indicate that persons with dark eyes (Negroes representing the extreme) see better at night, whereas light-eyed persons (albinos representing the extreme) are less sensitive in darkness.

Another investigator reports that dark-eyed persons withstand dazzling glare better than blonds.[3] Our own results from testing 1,238 individuals also indicate that light-eyed persons are more sensitive to glare than dark-eyed persons. This may be explained by the fact that light pigmented eyes, being more transparent than eyes with dark irises, transmit more light.

In this experiment an attempt was made to distinguish eyes on the basis of darkness of iris pigmentation. All the light-grey-, blue- and green-eyed subjects were placed in one group, and the dark-brown- and blue-eyed subjects were placed in another group. We feel that the important factor is not the color but the lightness or darkness of the eyes.

Six hundred and twenty light-eyed individuals and 618 dark-eyed individuals were used as subjects. The apparatus used in this investigation was a glare sensitivity test[4] which simulates in miniature a night-driving scene. While the subject holds his head against the eyepiece, two glaring lights shine into his eyes. The intensity of light at the eyepiece is kept constant at all times. The subject during the test is required to distinguish the direction of stripes painted on a rotating test object which has its own source of illumination. The threshold of sensitivity is determined by increasing the illumination on the test object until the subject can distinguish correctly the direction of the lines. At this point the index of glare sensitivity is ascertained in terms of the amount of light required to correctly perceive the lines. Fig. 1 shows that light-eyed individuals in all age groups are more sensitive to glare than dark-eyed individuals.

We have found that light-eyed persons are under a double handicap, at night: (1) Their eyes are not as sensitive under low illumination as those of dark-eyed individuals, so they are not able to distinguish dim objects when driving alone on a road at night; (2) they are more sensitive to glare than dark-eyed individuals, so that when confronted by glaring headlights they see the road less clearly.

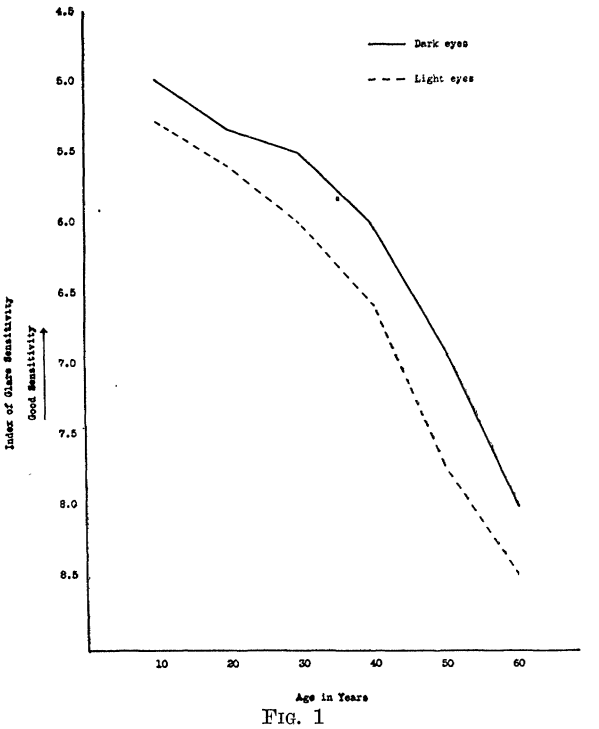

FIG. 1

There is also evidence that light-pigmented eyes have larger than average[5] pupils. Before acceptance, this discovery needs to be verified with more subjects. If found to be generally true, it may help to explain why light-eyed persons are blinded more by glaring headlights.

If future investigation corroborates the findings outlined above their applications to the automobile driver problem are as follows: (1) Light-eyed drivers as a group should be educated to drive more cautiously at night because of their poorer night vision and their greater susceptibility to glare from automobile headlights.

(2) Light-eyed drivers should be educated to protect their eyes by sun glasses in the daytime.

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ON THE CITATION OF AUTHORITIES FOR BOTANICAL NAMES

PEATTIE has recently made a plea for botanists to take up again the one-man citation for scientific names,

[1] H. Helson and J. P. Guilford, *Jour. Gen. Psychol.*, 9: 58–76, 1933.

[2] J. N. Roy, *Arch. Ophthal.*, 48: 72–83, 1919.

[3] E. Bayer, *Indust. Psychotechn.*, 10: 207–209, 1933.

[4] For description of glare test see: "Driver Testing Results," monograph by H. R. DeSilva, *Harvard Traffic Bureau*, 1937.

[5] H. S. Langfeld, *Ztsch. f. Sinnesphysiol.*, 42: 349–358, 1907–1908.

citing in the case of specific names the man who transferred the name into the proper genus, not the original authority. He also states that zoologists have picked the wrong man for their citations, since they cite *"the original authority, who first described the species."* It is urged that the one-man citation would make citing authorities less complex, thereby saving hours for those who use botanical nomenclature, but the important advantages of citing the original authority are mostly overlooked. In reality, Peattie has built an argument for scientific names with no authorities, which is entirely reasonable for popular, literary or horticultural usage, but botanists should not regulate their precise practices to these ends.

The original authority is the most important authority because it is: (1) The one which stands for a type and an original description. Some workers seem to fail to appreciate the importance of the type-concept in systematic botany. (2) The one with which our knowledge of the species begins. From the citation of an original authority, it is immediately possible to gage the length of time that the organism has been known to science. (3) The one which best affords us some opportunity to estimate the validity of a species. By the citation of the original authority, a conservative worker's species, transferred to a small segregate genus by a "splitter," still remains recognizable, while in the one-man citation, as proposed by Peattie, the original authority is obscured.

That the double citation has great practical advantage is evidenced by an actual experience which I had on the morning when the copy of SCIENCE, with Peattie's article, arrived. I am soon to visit an herbarium in South Carolina and desire to know what types of an early author, representing species, recognized to-day, in certain families in which I am interested, may be expected to be found there. Reference to Small's "Manual of the Southeastern Flora," recognizing many segregate genera, but fortunately employing the double citation, revealed in 15 minutes all the information that I wanted to know. Had this manual followed Peattie's proposal, it would have been necessary to indulge in endless library investigation, looking up references by people who had transferred names, trying to determine from the old author's descriptions to what modern genera his species would have been transferred and then whether or not they are to-day valid. The slight inconvenience to the man who wrote this manual thus saved me hours of thankless drudgery, simply because he employed the double citation. It might be suggested that I could have obtained my information by reference to the writings of the original authority himself, but from them I would have no way of knowing which are recognized to-day, nor could I readily have obtained this information from Index Kewensis.

Let popular writers discard all authorities, but let systematists continue to follow their slowly evolved, meticulous practice. Authorities are not part of a name, but for accurate systematic work their careful citation becomes an absolute necessity.

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BACTERIAL-PLANT GROUP OF DHAINCHA

THE names of the genus "Sesban," "Sesbana," "Sesbania," are synonymous.[1] The plant worked by me and published elsewhere,[2] *viz., Sesbania aculeata* Poir, commonly called in India "Dhaincha," and the two species mentioned by Briscoe and Andrews,[3] *viz., Sesban emerus* Aubl and *Sesban exaltata* (Raf.) Rydb., belong to the same genus "Sesbania."[4,5]

Briscoe and Andrews (*loc. cit.*) confirm the writer's earlier and more elaborate observations, save a few minor points. The writer, therefore, claims priority in its nomenclature as "Dhaincha Bacterial-plant Group" instead of that tentatively proposed by Briscoe and Andrews as "Sesban Inoculation Group."

Further work conducted by the writer on three other species of Sesbania, *S. speciosa,* Taub ex Ebgl.,[6] *S. grandiflora,* Poir,[1] and *S. macrocarpa,* Mohl ex Rafin,[1] indicate that they all belong to the "Dhaincha bacterial-plant group."

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SCIENTIFIC BOOKS

A BIOGRAPHY OF CLAUDE BERNARD

Claude Bernard, Physiologist. By J. M. D. OLMSTED, Professor of Physiology, University of California. Foreword by ALEXIS CARREL. Harper and Brothers, New York and London, 1938. xvi + 272 pp. $4.00.

CLAUDE BERNARD died on February 10, 1878. A few days later Michael Foster, then Trinity praelector in physiology at Cambridge, met his senior class and, putting his prepared lecture aside, remarked: "The recent death of a great physiologist, Claude Bernard,

[1] J. D. Hooker and B. D. Jackson, "Index Kewensis Plantarum Phanerogamarum," Tomme II, p. 890, 1885.
[2] M. S. Raju, *Zentralblatt für Bakt.,* etc., II Abt., 94: 249–262, 1936.
[3] C. E. Briscoe and W. B. Andrews, *Jour. Am. Soc. Agron.,* 30: 135–138, 1938.
[4] A. W. Hill, "Index Kewensis Plantarum Phanerogamarum," Supl. VI, pp. 193, 1916–1920.
[5] A. W. Hill, *Ibid.,* Supl. VII, pp. 223, 1921–1925.
[6] T. Duarand and B. D. Jackson, *Ibid.,* Supl. 1, pp. 385, 1886–1895.