

and footnote reference numbers may occur together on adjacent lines, set in the same type, and having approximately the same magnitudes. (I have just such a case before me in a recent issue of an important journal.)

Until a few months ago, however, this danger of confusion was, in my own case, rather an academic possibility than an actual experience. But it was realized in a rather disastrous way in a recent scientific paper of mine. On one page of this paper¹ occur two footnotes (numbered 1 and 2), likewise two fractions bearing exponents. The first of these, which should have been $(\frac{4}{5})^3$, has been printed $(\frac{4}{5})^1$. The

second, which should have been $(\frac{5}{6})^4$, actually reads $(\frac{5}{6})^2$. These typographical errors result not only in errors of elementary arithmetic, but they render unintelligible the discussion of a rather important phase of my subject, both on this and later pages of the text. The source of these errors, on the printer's part, seems obvious.

Is it unreasonable for me to suggest that reference numbers (or letters) to footnotes should be set in entirely different type from those employed as exponents?

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COLOR

By some mistake which neither the editor nor I can explain, the last part of my note on "Color" in *SCIENCE* for May 8, p. 495, was omitted. The portion omitted follows:

(6) If the physiological elements in the retina which respond to red light are missing, the phenomenon ends here and the sensation of red is not excited.

(7) If the eye is normal, the sensation is transmitted to the brain and mind by a process still entirely physical or chemical but evidently quite different from that by which the light has been transmitted to the eye.

(8) In the brain and mind the sensation of red is produced. Some think the phenomenon is still physical or chemical, but no one has been able to suggest any definite picture of the processes in the mind as physical phenomena.

(9) The name given to the sensation depends on previous comparisons which the individual has made with the aid of others. If he is an American he will call the sensation red. A Frenchman will call it rouge; a German, roth.

It is evident, therefore, that color is a complex phenomenon including many diverse elements no one of which can be omitted if the phenomenon is complete.

Durant in his "History of Philosophy" defines philosophy as "the synthetic interpretation of all experience" and seems to wish to delimit science as including only analysis and description. Most scientific men will agree, I think, that science which includes only analysis and description is of a low order. To be of much value it must rise above that to coordination and synthesis. In these higher reaches science and philosophy should become identical.

What has been given above may be called a scientific philosophy of color.

W. A. NOYES

HEIDELBERG, JUNE 11, 1931

SPECIAL CORRESPONDENCE

GRANTS-IN-AID OF THE NATIONAL RESEARCH COUNCIL

At its meeting in June the National Research Council's Committee on Grants-in-Aid made grants for the support of research as follows:

To Charles W. Jarvis, associate professor of physics, Ohio Wesleyan University, critical potentials of mercury vapor; C. E. Mendenhall, professor of physics, University of Wisconsin, photoelectric characteristics of metals; S. A. Mitchell, director, Leander McCormick Observatory, University of Virginia, the measurement of the proper motion of the stars for the determination of parallax; Louis A. Turner, associate professor of physics, Princeton University, tem-

perature distribution and metastability of vibration and rotation states of iodine molecules; Peter I. Wold, professor of physics, Union College, electrical properties of expanded mercury, with special reference to the Hall effect and to conductivity.

To Gleason W. Kenrick, assistant professor of electrical engineering, Tufts College, statistical study of field intensities in the low frequency region of the radio spectrum.

To Wilder D. Bancroft, World War Memorial professor of physical chemistry, Cornell University, the application of physical chemistry and colloid chemistry to biological and medical problems; Harry N. Holmes, professor of chemistry, Oberlin College, concentration of vitamin A and other vitamins.

To Arthur Keith, geologist, United States Geologi-

¹ *Journal of Genetics*, November, 1930, p. 307. Barring these unfortunate, but easily comprehensible errors, the press-work was exceptionally fine.

cal Survey, investigations of portions of northern Maine and of New Brunswick to determine the existence of two periods of mountain building; Lewis B. Kellum, assistant professor of geology, University of Michigan, reconnaissance of a belt of cross-folding in the Sierra Madre mountains of Mexico; K. C. McMurry, associate professor of geography, University of Michigan, land survey of Isle Royale; Jerome S. Smiser, instructor, department of geology, Princeton University, collection and description of the echinoids in the Cretaceous rocks of the Big Bend Trans Pecos, Texas; H. B. Stenzel, assistant professor of geology, Agricultural and Mechanical College of Texas, the paleontology and stratigraphy of the Lower Claiborne group in Leon County, Texas; Stephen Taber, professor of geology and mineralogy, University of South Carolina, structural geology of the land areas adjacent to the Bartlett trough.

To Morris G. Leikind, School of Hygiene and Public Health, Johns Hopkins University, lymphocystic disease of fish; Clarence A. Mills, professor of experimental medicine, University of Cincinnati, temperature adaptation in animals; William C. Rose, professor of physiological chemistry, University of Illinois, nutritive importance of the amino acids; Leo T. Samuels, assistant professor of biological chemistry, and Howard A. Ball, instructor in pathology, College of Medical Evangelists, the relationship between the hypophysis and the growth of autogenous and transplanted malignant tumors in animals; Charles W. Turner, associate professor of dairy husbandry, University of Missouri, the hormone of lactation of the anterior pituitary; George D. Williams, assistant professor of anatomy, Washington University, accurate determination of skin color.

To Bennet M. Allen, professor of zoology, University

of California at Los Angeles, the influence of the thyroid gland and hypophysis upon growth and development; L. R. Cleveland, assistant professor of protozoology, Harvard Medical School, phylogenetic relationships of the intestinal protozoan parasites of termites and other primitive insects; Ernst Gellhorn, associate professor of physiology, University of Oregon, comparative physiology of ion antagonism and ion effects in fatigued muscles; LaDema Mary Langdon, assistant professor of biology, Goucher College, comparative study of the embryogeny of Juglandaceae and Fagaceae; Manley L. Natland, Long Beach, California, ecological conditions of foraminifera and mollusca; Will Scott, professor of zoology, University of Indiana, distribution of the finger nail clams of Indiana; Paul B. Sears, professor of botany, University of Oklahoma, pollen analysis of Arkansas peats.

To Sophie de Aberle, instructor in anthropology and obstetrics, Institute of Human Relations, Yale University, growth and development in Indian children in New Mexico and Arizona; William R. Morse, dean of the College of Medicine and Dentistry, West China Union University, Chengtu, West China (at present at the Peabody Museum, Harvard University), anthropology of the inhabitants of the Province of Szechwan, West China; Elsie Murray, instructor in psychology, Cornell University, partial color-blindness; Jessie W. Murray, acting director, Tioga Point Museum, investigations of aboriginal Indian sites near Athens, Pennsylvania; E. Sapir, professor of anthropology and general linguistics, University of Chicago, the collection of the songs of the Nitinat Indians of Vancouver Island.

VERNON KELLOGG,
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National Research Council*

SOCIETIES AND MEETINGS

THE TEXAS ACADEMY OF SCIENCE

THE Texas Academy of Science held its spring meeting at Austin on June 5, where it was the guest of the Faculty Science Club. The occasion for this meeting was the conferring of life fellowship upon those who remained of the group of men who founded the academy on January 9, 1892. The session began on Friday afternoon with an inspection of the various laboratories and collections of the university. The visiting chemists were given a "preview" of the new chemistry building, which when completed will be one of the finest in the South. The various collections belonging to biology, botany, geology and anthropology drew their quota of visitors. At 7 P. M. a dinner

was served at the University Commons to one hundred and twenty-five members and guests. The program which followed consisted of a greeting to the academy from the president of the university, Dr. H. Y. Benedict, who also represented the Faculty Science Club. Dr. F. W. Simonds gave a history of the first ten years' work of the academy, which told of the struggles to gain for it the recognition of the scientific world.

J. Kern Strecker, president of the Texas Academy of Science, presented certificates of life membership to the following members: J. R. Bailey, professor of organic chemistry, University of Texas; H. Y. Benedict, president, University of Texas; James T. Clark,