11–17. World Federation for Mental Health, 10th annual, Copenhagen, Denmark. (Miss E. M. Thornton, 19 Manchester St., London, W.1, England.)

12–16. Canadian Teachers' Federation, annual, Edmonton, Alberta, Canada. (G. G. Croskery, 444 MacLaren St., Ottawa 4, Ont.)

12–18. Theory of Functions, internatl. colloquium, Helsinki, Finland. (B. Eckmann, Ecole Polytechnique, Federale, Zurich, Switzerland.)

12–25. International Soc. of Soil Mechanics and Foundation Engineering, 4th Conf., London, England. (A. Banister, Institution of Civil Engineers, Great George St., London, S.W.1.)

18–21. American Astronomical Soc., Urbana, Ill. (J. A. Hynek, Smithsonian Astrophysical Observatory, 60 Garden St., Cambridge 38, Mass.)

19–21. National Council of Teachers of Mathematics, Northfield, Minn. (M. H. Ahrendt, NCTM, 1201 16 St., NW, Washington 6.)

19–22. American Veterinary Medical Assoc., annual, Cleveland, Ohio. (J. G. Hardenbergh, AVMA, 600 S. Michigan Ave., Chicago 5, Ill.)

19–23. Clay Conf., 6th natl., Berkeley, Calif. (Dept. of Conferences and Special Activities, Univ. of California Extension, Berkeley 4.)

19–23. Clinical Chemistry, 2nd international European cong., Stockholm, Sweden. (K. Agner, Box 12024, Stockholm 12.)

19–23. Plant Science Seminar, 34th annual, Montreal, Quebec, Canada. (F. L. Mercer, St. Louis College of Pharmacy, St. Louis 10, Mo.)

19–24. Finite Groups, internatl. colloquium, Tübingen, Germany. (H. Wielandt, Faculty of Mathematics and Natural Science, Eberhard-Karls-Universität, Tübingen.)

19–24. High Energy Physics Symp., Oak Ridge, Tenn. (University Relations Div., Oak Ridge Inst. of Nuclear Studies, P.O. Box 117, Oak Ridge.)

19–24. New England Assoc. of Chemistry Teachers, 19th summer conf., Waterville, Maine. (Rev. J. A. Martus, College of the Holy Cross, Worcester 10, Mass.)

19–24. Origin of Life, internatl. symp., Moscow, U.S.S.R. (G. A. Deborin, Inst. of Biochemistry, U.S.S.R. Acad. of Sciences, B. Kaluzskaya 33, Moscow, B.71.)

20–22. Liquid Scintillation Counting Conf., Evanston, Ill. (C. G. Bell, Jr., Technological Inst., Northwestern Univ., Evanston.)

20–23. Western Electronic Convention, annual, San Francisco, Calif. (D. B. Harris, Electron Tube Research, General Electric Microwave Lab., Palo Alto, Calif.)

21–24. Pi Lambda Theta, New York, N.Y. (C. Johnson, Pi Lambda Theta, 307 Portland Bldg., 1129 Vermont Ave., NW, Washington 5.)

22–5. International Scientific Radio Union, 12th general assembly, Boulder, Colo. (K. A. Norton, Boulder Laboratories, National Bur. of Standards, Boulder.)

24–26. International Soc. for Biological Rhythm, 6th conf., Semmering, Austria. (A. Sollberger, Anatomical Department, Karolinska Institutet, Stockholm 60, Sweden.)

25–27. Pacific Division-AAAS, annual, in conjunction with American Inst. of Biological Sciences, Stanford, Calif. (R. C. Miller, California Academy of Sciences, Golden Gate Park, San Francisco, Calif.)

25–28. American Farm Economic Assoc., natl., Asheville, N.C. (L. S. Hardin, Dept. of Agricultural Economics, Purdue Univ., Lafayette, Ind.)

25–29. American Institute of Biological Sciences, annual, Stanford, Calif. (H. T. Cox, AIBS, 2000 P St., NW, Washington 6.)

26–28. Gas Dynamics Symp., 2nd, Evanston, Ill. (A. B. Cambel, Technological Inst., Northwestern Univ., Evanston.)

26–29. Boundary Layer Research, internatl. symp., Freiburg, Breisgau, Germany. (H. Görtler, Mathematisches Institut der Universität, Hebelstrasse 40 Freiburg, Breisgau.)

26–29. Mathematical Assoc. of America, 38th summer, University Park, Pa. (H. M. Gehman, Univ. of Buffalo, Buffalo 14, N.Y.)

26–30. American Mathematical Soc., 62nd summer, University Park, Pa. (J. H. Curtiss, AMS, 190 Hope St., Providence 6, R.I.)

26–30. Infrared Spectroscopy Inst., 8th annual, Nashville, Tenn. (N. Fuson, Infrared Spectroscopy Inst., Fisk Univ., Nashville 8.)

26–31. Low Temperature Physics and Chemistry, 5th internatl. conf., Madison, Wis. (J. R. Dillinger, Dept. of Physics, Univ. of Wisconsin, Madison 6.)

27. Society for Industrial and Applied Mathematics, summer, University Park, Pa. (D. L. Thomsen, Jr., 807 Enquirer Bldg., Cincinnati 2, Ohio.)

27–29. American Sociological Soc., annual, Washington, D.C. (Mrs. M. W. Riley, ASS, New York Univ., Washington Sq., New York 3.)

27–30. Biological Photographic Assoc., 27th annual, Rochester, Minn. (S. J. McComb, Section of Photography, Mayo Clinic, Rochester.)

28–30. Gas Chromatography, internatl. symp., East Lansing, Mich. (H. J. Noebels, IGC Symp., Instrument Soc. of America, 313 Sixth Ave., Pittsburgh, Pa.)

28–31. Soil Conservation Soc. of America, annual, Asilomar, Calif. (H. W. Pritchard, 838 Fifth Ave., Des Moines 14, Iowa.)

28–3. Cell Biology, 9th internatl. cong., St. Andrews, Scotland. (H. G. Callan, Dept. of National History, Bell Pettigrew Museum, The University, St. Andrews, Fife.)

29–30. Computers and Data Processing, 4th annual symp., Denver, Colo. (J. M. Cavenah, Denver Research Inst., Univ. of Denver, Denver 10.)

29–30. Econometric Soc., European meeting, Luxemburg, Duchy of Luxemburg. (Econometric Soc., Box 1264, Yale Station, New Haven, Conn.)

29–31. Group Psychotherapy, 2nd internatl. cong., Zurich, Switzerland. (S. Lebovici, 3, Avenue President Wilson, Paris 16e, France.)

(See issue of 21 June for comprehensive list)

LETTERS

The editors take no responsibility for the content of the letters published in this section. Anonymous letters will not be considered. Letters intended for publication should be typewritten double-spaced and submitted in duplicate. A letter writer should indicate clearly whether or not his letter is submitted for publication. For additional information, see Science **124**, *249 (1956) and* **125**, *16 (4 Jan. 1957).*

"Clocking" Horse Races

The articles by M. H. Lietzke [*Science* **124**, 178 (1956)] and by George P. Meade [*Science* **124**, 1025 (1956)] deal with measuring athletic performance and, in particular, consistent running records by time-distance measurements.

In my research in the field of racing prepotency of Thoroughbred horses, I have found that racing performance of horses cannot be measured sufficiently accurately by time-distance measurements. Horsemen have long known that no two tracks are equally fast, that no single track is consistently fast from day to day and often from hour to hour, and that trackmasters can and do vary track conditions at will, within certain limits.

Moreover, nearly all time measurements of athletic events are made by manually operated stop watches. I do not believe that there is any fixed way in which timers operate their stop watches. The turnover in personnel is large. In 1955 there were 98 official timers, only 21 of whom had served for as long as 6 years. During the 40-year period covered by the data on stakes races and the longer period covered by the data on track records, the individual timers must have numbered in the thousands. Consequently, it is not likely that there is a universal, systematic method of timing. Time measurements are likely to be inaccurate to at least one interval of measurement (usually 1/5 second, which is equivalent to 10 to 12 feet in horse running races) as a result of human psychological aberrations.

Fractional-second times for Thoroughbred running races for the period 1910–1949 are given by the *American Racing Manual* (Triangle, Chicago, 1950) as follows: (i) Track records through 1949 on all listed tracks (1416 races): 1/5 second, 16.9 percent; 2/5 second, 19.5 percent; 3/5 second, 19.9 percent; 4/5 second, 16.7 percent; even seconds, 27 percent. (ii) One hundred major stakes events (3183 races): 1/5 second, 16.1 percent; 2/5 second, 19.2 percent; 3/5 second, 19.8 percent; 4/5 second, 17.3 percent; even seconds, 27.6 percent.

These data show that "clockers" dislike timing races in the fractional intervals and prefer even seconds. There is a small net change of actual times from

the 2/5 second interval to the 1/5 second interval and, likewise, from the 3/5 second to the 4/5 second interval. There is a considerable net change of actual times from the 1/5 and 4/5 second intervals to the even seconds.

That this marked preference for the even second is peculiar only to "clockers" of horse races and to no one else is improbable.

In view of these extraneous variables, it does not seem possible to establish a definitive time-distance relationship for horse running races.

W. B. TABER, JR.
Kansas, Illinois

Scientific Poetry

For some years now, in discussing the fact that the impact of science on mankind may well lead to misunderstanding and trouble unless scientists can make their discoveries emotionally apparent to people, I have suggested that we need scientific poetry. Now the contribution made by acknowledged poets is very small (a little from Shelley and Milton, but not a vital body of poetry), and it seems to be increasing only trivially. On the other hand, I feel sure that many scientists are writing verse (I can name three). I would like to suggest that anyone who has any such lines, and who would care to do so, send them to me as a kind of clearinghouse. If enough material arrives, arrangements can be made to mimeograph and circulate it among those who are interested.

I suggest one or two ground rules. The first is that the author give his name, even if the poem is signed with a pseudonym. The second is that poems of epic dimensions be considered a little out of place until means for handling them have developed. The third is, of course, that all classes of poetry, serious and light (even including laboratory limericks), are welcome. My address is Box 2166, Yale Station, New Haven, Conn.

ERNEST C. POLLARD
Yale University,
New Haven, Connecticut

Satirical Biology

Lovers of spoof biology (and who is not?) rejoiced greatly in a recent article on "Biological clock in the unicorn" [*Science* **125**, 874 (3 May 1957)]. The appearance of a satirical spoof of this kind inevitably raises general questions of widespread interest. Is any form of satire a legitimate style in which to write serious scientific criticism in a reputable journal? If so, does any particular instance meet a sufficiently high standard of plausible falsehood combined with some sharp truth? Are there any rules for this sort of thing?

There can be little real question of propriety because satirical spoofs have an ancient and honorable history. The Royal Society of London published its first spoof, designed to administer a wholesome jolt to the credulous, in the 1840's. David Starr Jordan, ichthyologist and university president, taught the gullible the value of suspended judgment in 1896 with his published account of a "sympsychograph," which enabled the operator to penetrate photographically into the minds of seven men simultaneously. In more recent years, Egerton Y. Davis, M.D., of Caughnawaga, P.Q., better known as William Osler of the Johns Hopkins School of Medicine, delighted to puncture some pomposities of medical literature with those incredibly solemn and vacuous studies on the perineal muscles.

It is a matter of opinion whether the present investigation into the physiology of the unicorn matches L. W. Sharp's immortal monograph on *Eoornis Pterovelox,* published by the Buighleigh Press (of Ithaca?) in 1928, or G. Albrecht's camera-documented account of the Schuss yucca, which was printed in *The Scientific Monthly* for October 1952. There is no doubt, however, that the "Clock in the unicorn" carries the kind of refreshing laughter which dissolves the lush overgrowths and precancerous verbosities of the scientific mind.

Spoofs of all kinds involve certain risks, including the risk of being misunderstood. They extend over a broad spectrum, from inconsequential foolery, through high satire, to downright hoaxes intended to deceive for financial gain. The day seems happily past when a scientific idea can be laughed out of court without testing, in the way that Voltaire ridiculed virtually into oblivion the particulate theory of heredity when it was proposed by de Maupertuis, more than a century before Mendel. We can be sure that the question of the nature of any rhythms which may or may not reside in *Drosophila* eggs, fiddler crabs, or slices of New Jersey potatoes will be answered the more rigorously because of the laughter from that incorrigible pedestrian, common sense.

No one, and least of all scientific truth, stands to suffer harm from the well-tempered spoof. Innocence of harm to truth should be the Paris meter by which the legitimacy of a spoof is judged. Other rules? Brevity and rarity —extreme rarity. To specify more would