When Scientists Disagree

The possibility that advances in science may have important social consequences is not new. Nor is it novel to find scientists in dispute about the meaning of a particular finding. But the recent striking increase in the first possibility has made the general public forcibly aware of the second. The result, in part, is a distrust of science arising from honest perplexity, for one may well ask who shall decide when scientists disagree. What the scientific enterprise needs is something better in the way of public relations, and the first point to make clear is that disagreement in science differs from the more familiar kinds of disagreement in an important respect.

In analyzing kinds of disagreement, it may be helpful to borrow the distinction between disagreements in attitude and disagreements in belief that was introduced by the contemporary American philosopher C. L. Stevenson. Suppose that a group of boys are considering playing a game. If one wants to play football and another baseball, this is a difference in attitude. But once football, say, is decided upon, and its rules accepted, then, if one boy claims that his opponent was offside and the latter says he was not, this is a difference in belief. A corollary of this distinction is that there is no logical connection between disagreements in attitude and disagreements in belief, although the two may be related as a matter of psychological fact. For example, if one of the boys wants to play baseball under the impression that it is spring, when in fact it is fall, his choice of game might change once his beliefs were corrected.

This is not to deny that the disputes usually encountered in the world are complex affairs. The point is that they are complex in a special way, for they involve differences both in attitude and in belief. For example, in a dispute between management and labor, the opposing parties may disagree about how much profit management is making—that is, in the facts of the case—as well as in their respective judgments about what constitutes a fair profit. Other examples of disputes that are complex in this special way include the differences between the Republicans and the Democrats, between the supporters of integration and of segregation, and between the faculty and the administration of a college.

In broadest outline, a scientific dispute differs from other disputes in that it involves only one kind of disagreement, a disagreement in belief. The attitude accepted by both parties is the scientific attitude, which finds that the way to answer a question, if it can be answered at all, is by an appeal to experiment—not by an appeal to force, to a vote, to authority, or to personal revelation. Further, the appeal to experiment must be conducted according to those principles that sometimes are collectively referred to as scientific method (see editorial in Science of 6 Sept. 1957).

To be sure, this account of the difference between scientific disagreement and the more familiar kinds of disagreement is oversimplified. Actually, in science there may be differences in attitude within the area of fundamental agreement. For example, in seeking an explanation for a particular behavioral disorder, one group may stress the subject's early training, another may emphasize organic disturbances. Nevertheless, when there is disagreement in belief, but agreement in scientific attitude, there is at least some assurance that the dispute is only temporary, because further application of the same method, a method accepted by both sides, may decide the question.—J. T.
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17–18. American Ceramic Soc., 10th Pacific Coast mtg., San Francisco, Calif. (C. E. Pearce, ACS, 4055 N. High St., Columbus 14, Ohio.)

17–18. Industrial Hydraulics, nat. conf., Chicago, Ill. (Conference Secretary, Armour Research Foundation, 10 W. 35 St., Chicago 16.)

17–19. Indiana Acad. of Science, Greencastle. (H. Crull, Dept. of Mathematics, Butler Univ., Indianapolis 7, Ind.)

17–19. Optical Soc. of America, Columbus, Ohio. (S. S. Ballard, Visibility Lab., Scripps Institution of Oceanography, San Diego 52, Calif.)


22–25. American Dietetic Assoc., annual, Miami, Fla. (Miss R. M. Yake, ADA, 620 N. Michigan Ave., Chicago 11, Ill.)

23–25. American Soc. of Body Engineers, Detroit, Mich. (E. W. Lange, ASBE, 100 Farnsworth, Detroit 2.)

24–25. Computer Applications Symp., Chicago, Ill. (Conference Secretary, Armour Research Foundation, 10 W. 35 St., Chicago 16.)


24–25. New Mexico Acad. of Science, annual, Albuquerque. (W. J. Koster, Dept. of Biology, Univ. of New Mexico, Albuquerque.)


25–26. Midwest Conf. on Biology Teaching in Colleges and Smaller Universities, Des Moines, Iowa. (L. P. Johnson, Dept. of Biology, Drake Univ., Des Moines 11.)


27–1. Atom Fair, New York, N.Y. (Atomic Industrial Forum, 3 E. 54 St., New York 22.)


30–2. Federation of Paint and Varnish Production Clubs, 35th annual, Philadelphia, Pa. (FPVPC, 121 S. Broad St., Philadelphia 7.)


31–2. Engineering and Scientific Education Conf., Chicago, Ill. (J. E. Harrington, Western Soc. of Engineers, 84 E. Washington St., Chicago 14.)

31–2. Gerontological Soc., annual, Cleveland, Ohio. (N. W. Shock, Baltimore City Hospitals, Baltimore 24, Md.)

November


3. American College of Dentists, annual, Miami, Fla. (O. W. Brandhorst, 4221 Lindell Blvd., St. Louis 6, Mo.)

3. Society of Vertebrate Paleontology, annual, Philadelphia, Pa. (J. T. Gregory,
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Peabody Museum, Yale Univ., New
Haven, Conn.)
3-9. Pan American Cong. of Pharmacy
and Biochemistry, 4th, Washington, D.C.
(G. Griffenhagen, Smithsonian Institu-
tion, Washington 25.)
4-5. Crystal Structure Analysis by IBM
704 Computer, NBS Conf., Washington,
D.C. (V. Vand, Pennsylvania State Univ.,
University Park.)
4-5. Society of Vertebrate Paleontology,
technical sessions, Atlantic City, N.J.
(J. T. Gregory, Peabody Museum, Yale Univ.,
New Haven, Conn.)
4-6. Analytical Chemistry in Nuclear
Reactor Technology, Gatlburg, Tenn.
(D. D. Cowen, Oak Ridge National Lab-
oratory, P.O. Box X, Oak Ridge, Tenn.)
4-6. Geological Soc. of America, an-
nual, Atlantic City, N.J. (H. R. Aldrich,
GSA, 419 W. 117 St., New York 27.)
4-6. Mineralogical Soc. of America, an-
nual, Atlantic City, N.J. (C. S. Hurlbut,
Jr., Dept. of Mineralogy, Harvard Univ.,
Cambridge 38, Mass.)
4-6. Paleontological Soc., annual, At-
lantic City, N.J. (H. B. Whittington,
Museum of Comparative Zoology, Harvard
Univ., Cambridge 38, Mass.)
4-6. Society of Economic Geologists,
anual, Atlantic City, N.J. (H. M. Ban-
ham, U.S. Geological Survey, Washing-
ton 25.)
4-7. American Dental Assoc., annual,
Miami, Fla. (H. Hillenbrand, 222 E.
Superior St., Chicago 11, Ill.)
6-9. Electrical Techniques in Medicine
and Biology, Boston, Mass. (H. S. Kind-
ler, Instrument Soc. of America, 315 Sixth
Ave., Pittsburgh 22, Pa.)
7-8. Society for Applied Spectroscopy,
12th annual, New York, N.Y. (J. Han-
sen, 27 Tulsa Ave., Metuchen, N.J.)
7-8. Television and Radio in the Health
Field, conf., Chicago, Ill. (American Med-
ical Assoc., 553 N. Dearborn St., Chicago
10.)
7-9. Animal Care Panel, 8th annual,
San Francisco, Calif. (R. J. Flynn, ACP,
Box 299, Lemont, Ill.)
7-9. Society of Rheology, annual,
Princeton, N.J. (W. R. Willets, Titanium
Pigment Corp., 99 Hudson St., New York.)
10-13. Society of American Foresters,
37th annual, Syracuse, N.Y. (H. Clepper,
SAF, 415 Mills Bldg., Washington 6.)
10-13. Xi Sigma Pi, Syracuse, N.Y. (J.
R. Parker, School of Forestry, Univ. of
Georgia, Athens.)
10-14. Society of Exploration Geo-
 physicists, 27th annual, Dallas, Tex. (J.
C. Hollister, Colorado School of Mines,
Golden.)
11-13. Radio Fall Meeting, IRE,
Toronto, Ont., Canada. (V. Graham,
REMTA, 11 W. 42 St., New York 26.)
annual, Chicago, Ill. (API, 50 W. 50 St.,
New York 20.)
11-15. American Public Health Assoc.,
85th annual, Cleveland, Ohio. (R. M.
Atwater, APHA, 1790 Broadway, New
York 19.)
11-15. American Soc. of Professional
Biologists, annual, with American Public
Health Assoc., Cleveland, Ohio. (A. F.
Borg, Dept. of Bacteriology, Kansas State
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(See issue of 16 August for comprehensive list)
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