

SCIENCE

5 July 1968

Vol. 161, No. 3836

AMERICAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE



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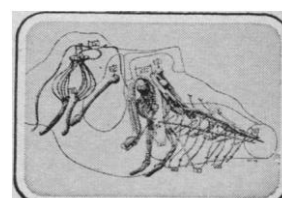
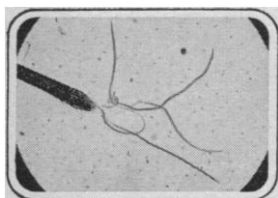
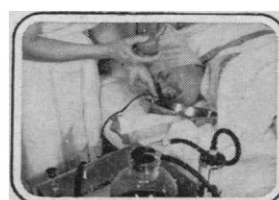
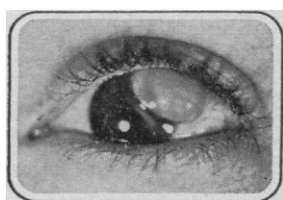
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COVER

Painted wood kachina doll made in the 19th century by a Hopi Indian of the southwestern United States. Such dolls are carved and decorated to represent supernatural beings. See review of *American Indian Painting of the Southwest and Plains Area*, page 35. [The Brooklyn Museum, Brooklyn, New York]

The American Association for the Advancement of Science was founded in 1848 and incorporated in 1874. Its objects are to further the work of scientists, to facilitate cooperation among them, to improve the effectiveness of science in the promotion of human welfare, and to increase public understanding and appreciation of the importance and promise of the methods of science in human progress.

tion of smoke or other particulate matter. However, since air temperatures are higher in the center of London than in surrounding areas, and there is less vegetation, wet fog seldom forms here, even when it is present in the suburbs. As control of smoke increases, there is also less chance of any serious reduction in visibility. Already in the heart of London we can enjoy air that is no smokier than that in many small communities up and down the country. The grime of ages has been washed from St. Paul's Cathedral and from many public buildings, with a reasonable prospect of their remaining clean for many years to come.

We still suffer from a substantial amount of pollution by sulfur dioxide, and traffic fumes are unpleasant in busy streets, but if conditions were still as they were in Chadwick's day there would have been little point in building a revolving restaurant 600 feet above the city so that patrons could admire the view.

R. E. WALLER

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College, Charterhouse Square, London*

Mining in Glacier Bay Monument

In Carter's review (29 Mar., p. 1449) of the Sierra Club book, *Glacier Bay*, he states that nature conservationists oppose mining of significant nickel-copper and molybdenum deposits in the Glacier Bay Monument [although these strategic metals are scarce in the U.S.] and that

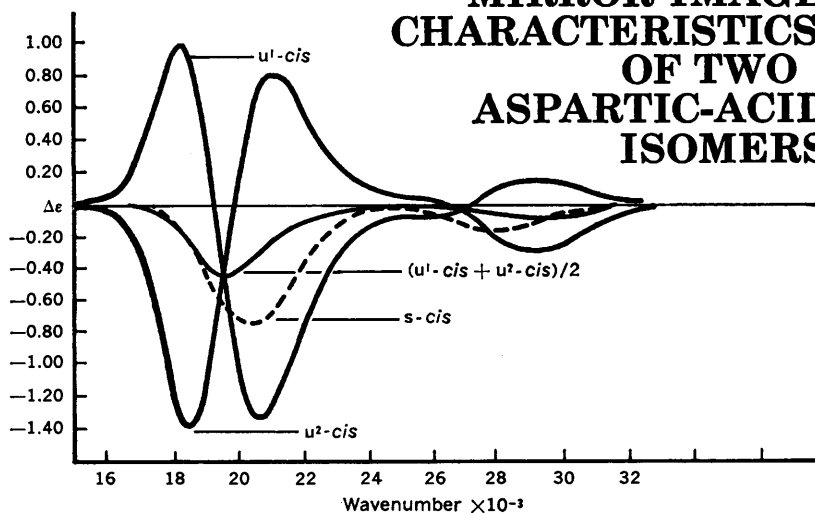
If there should be a critical shortage of metals, any prohibition imposed by Congress on mining in a Glacier Bay National Park could, of course, be lifted by Congress. In fact, such authority could be delegated to the President for use at his discretion. The fear of some that critically needed resources may be kept permanently "locked up" in wilderness preserves always has been baseless.

That fear is not baseless. The theory that presidential "unlocking" of withdrawn minerals makes them available for imminent emergency use is unsound, because many years must elapse between exploration, discovery, development, and finally, access to the metals. It is true that "economists know no way to make benefit-cost analysis adequately reflect the intangible values of wilderness and other natural environments," but equating scenery with price

CHEMICAL PROFILES

... drawn by Durrum

PROVING THE MIRROR-IMAGE CHARACTERISTICS OF TWO ASPARTIC-ACID ISOMERS



Aspartic acid, with its three donor sites, can form a variety of hard-to-identify chelate isomers. The three circular-dichroism profiles drawn here, plotted from data gathered by a Durrum-Jasco CD Recorder, are typical of the molecular detective work* that can be achieved with this versatile instrument.

The steric requirements of aspartic acid indicate that in a cobalt-diethylenetriamine complex, three isomers will predominate: one *s-cis* (symmetrical) and two *u-cis* (unsymmetrical). The latter are essentially mirror images of each other, and the Durrum-Jasco instrument provides a way to identify one from the other.

The configurational contributions to the CD traces of the two mirror-image isomers should, in theory, cancel out, leaving an "average" trace that approximates that of the *s-cis* isomer where there are no configurational contributions. As seen here, a very close correlation is achieved, proving that the two *u-cis* isomers are indeed pseudo-mirror images and providing clues as to their specific forms. The Durrum-Jasco CD Recorder is a powerful analytical tool, used throughout the world to classify and identify complex organic and biochemical compounds.

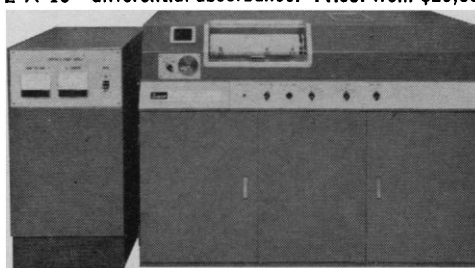
CD SPECIFICATIONS OF DURRUM-JASCO ORD/CD-5:

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CD Range: full scale differential absorbance readings of ±0.002, 0.005, 0.010 and 0.020.

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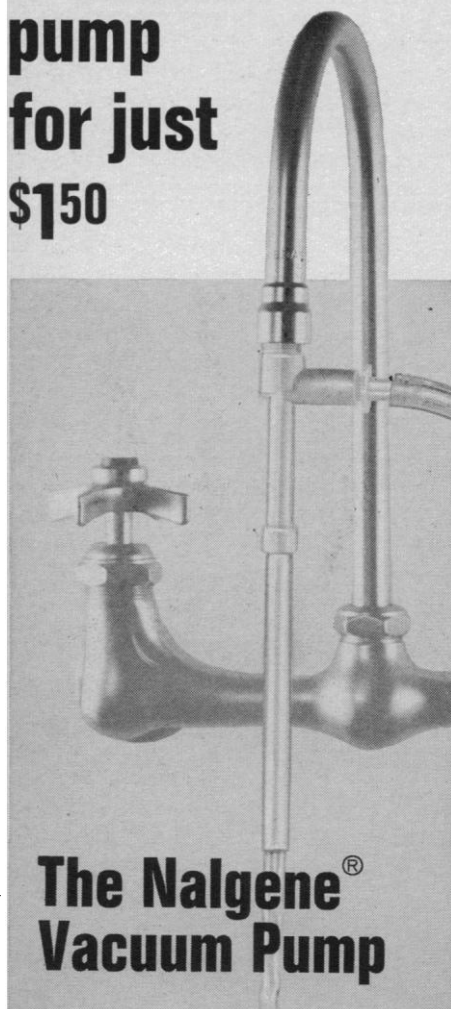
*AS REPORTED BY J. IVAN LEGG AND DEAN W. COOKE IN THE DECEMBER 20, 1967 ISSUE OF JOURNAL OF THE AMERICAN CHEMICAL SOCIETY



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WILLIAM W. PORTER II
35401 Cheseboro Road,
Palmdale, California 93550

Undergraduate Math

Fleming (Letters, 24 May) wonders "if the Committee on the Undergraduate Program in Mathematics might not do well to examine the undergraduate curriculum as well as the graduate degree requirements." In fact, CUPM has been doing just that since 1960; its recent recommendations for the preparation of college teachers of mathematics represent a new activity. Copies of the CUPM newsletter No. 2 (May, 1968) which describes these recommendations for undergraduate math programs may be obtained from CUPM, P.O. Box 1024, Berkeley, California.

R. P. BOAS
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Campus Demonstrations

Wolfe's editorial (22 Mar., p. 1309), in defense of university presidents contains a one-sided and therefore misleading statement on the nature of campus demonstrations: "Some demonstrations have not been directed against university policies, but have dragged the university into controversy over Selective Service procedures or American participation in Vietnam." This statement requires correction insofar as it applies to demonstrations against the Selective Service, military recruiters, or the war.

The point of demonstrations on these issues, to the extent of my familiarity with them here and from reading about them elsewhere, is not to "drag the university into" irrelevant controversy, but

to call attention to the varying degrees of involvement of the university in these areas, and to raise the questions of whether academic freedom is compromised by such involvement. I believe that it is indeed legitimate to ask whether a university can preserve its intellectual and moral freedom while receiving defense research contracts (especially if the research is classified) worth millions of dollars a year, or while it tolerates the presence of a semi-autonomous ROTC program or supplies information on its students to the Selective Service system. Such questions have generally been swept under the rug before demonstrations occurred, and this refusal to face them has been an important contributory cause of the demonstrations.

LOUIS G. HOFFMAN
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In Defense of Dissent

The successful attempt by certain faculty members to keep Bill Shockley from speaking at Brooklyn Polytechnic Institute ("News in Brief," 24 May, p. 863) is a classic demonstration of the inability of many self-styled liberals to understand what free speech is all about. These unilateral liberals are willing to tolerate any dissent as long as it is not "wrong"; that is, in disagreement with or questioning the dogma currently held by themselves.

Dogma: "There are no racial differences in intelligence."

Shockley: "I dunno—let's find out."

Unilateral Liberals: "Racist! Nazi! We won't let you speak!"

Such an attitude, I submit, is less scientific or scholarly or liberal than it is dogmatically religious and is indistinguishable in kind from those of Adolph Hitler, both Joes (McCarthy and Stalin), the Birchers, and for that matter, Torquemada and the orthodox Marxists. . . . Free speech implies the toleration not only of "proper" but of "wrong" dissent—Voltaire, the Supreme Court, and the American Civil Liberties Union all seem to agree with me. And if any dogma is sacred and not to be questioned, the age of the Inquisition is on the way back. God preserve us from the man who knows that he is right!

JOHN D. CLARK
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Newfoundland, New Jersey 07435

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Concerning Dissent and Civil Disobedience

What rights are exercised, and what rights are violated, when students forcibly occupy a campus building, when participants in the Poor People's Campaign march to the U.S. Capitol with the intention of being arrested there, or when critics oppose the war in Vietnam? Abe Fortas, newly appointed Chief Justice of the Supreme Court, has written an admirably brief and clear explanation* of the constitutional principles involved.

The need to understand the principles will continue. The war in Vietnam is not the first and may not be the last unpopular war. Much has been achieved in the removal of racial discrimination, but the much is still too little. Justified student complaint must be distinguished from disruptive intent. The dean of Howard University's Law School has described the dilemma of his students in wanting to follow the law yet wanting to change radically our legal and social structure. The reformer's appetite is increased, not satisfied, by moderate initial success. The need to understand the principles involved will not soon disappear.

The rights to dissent, to advocate social change, to oppose government policy and practice, to change government itself—all these, if carried out by peaceful means, are protected under the Constitution. Fortas writes: "Nowhere in the world—at no time in history—has freedom to dissent and to oppose governmental action been more broadly safeguarded than in the United States of America, today."

But the right to dissent runs into another right. "The Constitution seeks to accommodate two conflicting values, each of which is fundamental: the need for freedom to speak freely, to protest effectively, to organize, and to demonstrate; and the necessity of maintaining order so that other people's rights, and the peace and security of the state, will not be impaired." It is actions, therefore, rather than motives or thoughts that must be judged. No matter how nobly motivated, actions that endanger others or infringe their rights are unlawful and subject to punishment.

Yet sometimes one feels it his duty to disobey a law he considers immoral, and Justice Fortas writes: "I am a man of the law. I have dedicated myself to uphold the law. . . . But if I . . . had been a Negro living in Birmingham or Little Rock or Plaquemines Parish, Louisiana, I hope I would have disobeyed the state law that said I might not enter the public waiting room reserved for 'Whites.'"

If the route of disobedience is taken, the consequences must be accepted. Acting in the great tradition of true civil disobedience, Dr. Martin Luther King warned that Negroes would disobey unjust laws, and then insisted that the disobedience be open and peaceful and that those who disobeyed accept the consequences. It may seem unduly harsh to fine or jail a person who violates a law he believes immoral or unconstitutional, but this is the rule of law—the rule of law that is essential to the procedure we have developed to protect dissent and to encourage peaceful change. The objectives of a particular movement or protest may be of great importance for the quality of our lives, but preservation of the procedure is our guarantee of future change and improvement.

In a time of troubled disagreements, when the term *civil disobedience* is widely misapplied, Mr. Fortas offers help to protestors and activists in understanding their rights and the limitations on those rights, and a guide to other persons in formulating standards for judging the actions they watch with fear, with wonder, or with sympathy.—DAEL WOLFLE

*Abe Fortas, *Concerning Dissent and Civil Disobedience* (New American Library of World Literature, New York, 1968), 64 pages, paper, 50¢.

AAAS SYMPOSIUM VOLUMES

In Agriculture and Related Fields



AGRICULTURE AND THE QUALITY OF OUR ENVIRONMENT

Editor: N. C. Brady

476 pages, bibliography, author and subject indexes. 1967.
Price: \$13.50. AAAS members' cash orders: \$11.50.

Agriculture and the Quality of Our Environment addresses itself to this two-pronged problem: How does environmental quality affect agriculture and how does agriculture affect the quality of the environment?

This book provides a good summary and analysis of agriculture's stake in the quality of our environment. It also identifies the part which science must play to solve environmental pollution problems.

GROUND LEVEL CLIMATOLOGY

Editor: Robert H. Shaw

408 pp., 144 illus., bibliog., index, 1967.
Price: \$12.50. AAAS members' cash orders: \$10.50.

Ground Level Climatology consists of twenty papers dealing generally with the theme of weather and agriculture (including forestry) and specifically with the climate closely surrounding plants and animals—the microclimate. Investigators in the field of ground level climatology seek to understand the complex relationships between living organisms and their environment: the relation of climate to the distribution and abundance of plants and animals; the effects of weather modification on physical processes within the microclimate; and the effects of moisture, temperature, and energy balance on physiological functions.

AGRICULTURAL SCIENCES FOR THE DEVELOPING NATIONS

Editor: A. H. Moseman

232 pp., 37 illus., bibliog., index, 1964.
Price \$6.75. AAAS members' cash orders: \$6.00.

The symposium was devoted to the role of agricultural science and technology in the acceleration of economic progress in newly developing nations. The twelve chapters of this volume comprise an informed summary of the problems and opportunities of technical, economic, and educational assistance in agriculture. The book will be helpful in furnishing some background experience for the use of agricultural planners in the newly emerging countries.

GERM PLASM RESOURCES

Editor: Ralph E. Hodgson

394 pp., 59 illus., bibliog., index, 1961.
Price: \$9.75. AAAS members' cash orders: \$8.50.

The 25 papers treat the subject according to origin of germ plasm, developmental programs, new approaches to uses and perpetuation, and protection of plant and animal germ plasm.

Progress in improving the usefulness of the available germ plasm is measured. The need for additional germ plasm is pointed out, and problems relating to further development, preservation, and utilization of germ plasm to advance plant and animal production are indicated.

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