Recommendations to Congress

Publication in this issue of the full report of the Association's recently held Parliament of Science will give readers a chance to judge for themselves what the Parliament accomplished. Press assessment has varied from reasonably enthusiastic praise to the strong criticism that while the Parliament discussed a number of important issues it usually did not carry the discussion to the point of making concrete recommendations about what should be done. Judgments about the holding of the meeting have been more uniform: most commentators have agreed that the effort itself was a good one and that the Association should be commended for bringing the thinking of scientists to bear on problems of science and public policy.

Such a meeting is one means through which scientists can express their judgment on matters of public policy, but it is not the only means. Individual judgments are also necessary, and individual judgments may be more specific in recommending action that the individual considers desirable.

There is now a quite specific opportunity to make known one's individual views on how the Federal Government can give the most help toward the improvement of education. Senate and House committees have held hearings on education bills and will soon report their recommendations—probably in the form of a new bill, or bills, embodying whatever the committees decide to retain of the original proposals. There is considerable uncertainty about how the various differences will be compromised, especially on one point. Last year and the year before, Congress defeated proposals that federal funds be used for the construction of new school buildings. This action was largely determined by the segregation issue; some members insisted that a segregation clause be included in the legislation; others refused to vote for the bill if a segregation clause was included; some saw a favorable vote on the segregation clause as a means of insuring ultimate defeat of the whole bill.

This year both of the major education bills [see Science 127, 389, 21 Feb. 1958] emphasize improvement of the quality of education and say nothing about school construction. School construction proposals are still very much alive, however, and it is quite likely either that this feature will be included when the bills are reported out of committee or that amendments will be offered during debate. Either way, the segregation issue will rise again. The result will probably be defeat for school construction funds and quite possibly for the other proposals as well.

Supporters of the idea that federal funds can best be used to raise educational standards and to improve the quality of education are therefore faced with a problem of practical politics. Even though they may not oppose the use of federal funds for school construction per se, they have to decide whether to support or to oppose the addition of school construction proposals to the present bills. Support for the inclusion of money for school construction will probably not be strong enough to secure adoption of this legislation, and may indirectly help to defeat the other educational proposals. Opposition may appear to be a denial of one of education's real needs, but it may on the contrary actually increase the chances of getting the other proposals approved by Congress.

In the collective judgment of the Parliament of Science, efforts to improve the quality of teaching and education should take priority over the construction of more classrooms. The Parliament did not go beyond the statement of this principle, however, to indicate what actions should be taken in such a practical dilemma as the one that faces Congress. Scientists, together with faculty members in all fields and at all levels, have a major interest in how Congress resolves this problem. The members of Congress will be helped by knowing what individual scientists and educators recommend.—D.W.
The place of the Particle Accelerator in Basic Research...

The Effects of Ionizing Radiation in Liquid Systems - V

Determination of the effects of ionizing radiation in liquid systems is a challenging problem. Many physical models of the liquid phase have been proposed, and some success has attended their use. Although short-range molecular order appears to exist, complete disorder occurs at distances substantially greater than the molecule size, where the individual molecules wander through the system in a random manner. This condition, combined with the difficulty of measuring directly the changes in physical and chemical properties of the liquid molecules, complicates the analysis of ionizing-radiation effects in liquid systems.

Experimental Techniques

The experimental techniques usually adopted to study radiation effects are: measurement of the change of some solute in solution, or measurement of the yield of some product formed by the action of radiation. Analyses of radiation-formed products can be used to develop a mechanism for explaining the interaction of the incident radiation. Several Van de Graaff® accelerators, including those at the University of Notre Dame and the Brookhaven National Laboratory, are presently being used in studies of liquids under electron or x-ray bombardment.

Water Studies

One of the best-known liquids, which has received a great deal of attention from radiation chemists because of its importance in many radiobiological and radiochemical systems, is water. The generally accepted result of the interaction of a charged particle with a water molecule is dissociation, resulting in the production of free H and OH radicals. These may combine to re-form water or the molecular products H2O2 and H2, or they may diffuse from the site of their formation to react with solute molecules in solution. Studies of the kinetic behavior of these radicals have been important in analyzing many radiation-induced reactions.

A typical experimental method of studying the effects of these radicals is to investigate the radiation yield in the wet and dry states. This will give the percentage of radiation-induced changes caused by the transfer of radiation energy from the solvent molecules to the solute. The addition of scavenger molecules which compete with the solute for radicals will give some indication of the relative reactivity of the radicals.

Energy Levels

Since the energy of dissociation of typical liquid molecules is of the order of tens of electron volts, while the energy transferred from the incident radiation may be many hundreds of electron volts, it is difficult to measure the direct effect on the individual molecules. Although values of ionization and excitation energy have been extrapolated from gas-phase studies, it is not easy to relate the effect of the molecular binding energy in the solution to the dissociation energy. About the best that can be done is to obtain as uniform a distribution of radiation energy throughout the system and to assume that all secondary electrons have the same probability of interaction as the primary beam. The yield is then calculated in terms of the number of molecules changed per unit-energy input. The unit is the so-called G value which measures the number of molecules changed or formed per 100 electron volts.

Although the analysis of radiation-induced changes in liquid systems is complex, great strides have been made during the past few years. With the availability of homogeneous beams of charged particles from Van de Graaff accelerators, which permit wide selection of energy and current values, it is expected that even greater success will be attained in the near future.

References:
1. R. H. Fowler, N. B. Slater, Trans. Far. Soc. 34, 81, 1957

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Letters

Science Books for Children

The launching of Sputnik I and Sputnik II has speeded up the re-evaluation of science education in this country.

For some years now it has been my thought that there ought to be an award for the best science book for young people, similar to the Newberry and Caldecott awards. The John Newberry Medal for the Most Distinguished Contribution to American Literature for Children has been awarded annually since 1922, while the Caldecott Medal has been presented to the artist of the most distinguished picture book of the year.

There is no reason why, in this scientific age of ours—or space age, if you will—the American Association for the Advancement of Science should not make an annual award of a medal, named for an illustrious scientist, in order to single out what the association considers to be the best book on a scientific subject for young children. This would help to develop the idea that the study of science is, after all, part of the study of the humanities; it would help to encourage writers of science books; it would help to bring the fields of literature and scientific endeavor together.

It is a truism that our children are the hope of the future. It is they who will be the scientists of the future. I believe, therefore, that establishment of an AAAS science award would be a worthy project, eminently fitting as part of our increased emphasis on science education for the very young. Science education is not only for college and high-school students; it must of necessity begin in the elementary-school grades. I would like to see an award of this type given for books that are published for children below the age of 12. An example of the kind of book that might be honored by such a prize is the beautiful little volume by Irma Zeller Walker called Up Above and Down Below, which is meant for grades two to four in the public schools.

H. Roosin

Hollywood, California

Shorthand Notation

In Science recently [127, 297 (7 Feb. 1958)], H. C. H. Kernkamp describes a method for indicating castration by use of the sex symbols ♂ and ♀ with a portion of the circle removed.

Many laboratories develop a shorthand type of notation to indicate “physiological sex.” Our own is quite convenient and may be of interest. Castration is indicated by a cross superimposed upon the circle, the gender symbol; immaturity is denoted by incomplete symbols (the female symbol without the crossbar; the male symbol without the arrowhead); pregnancy, by making the vertical bar of the female symbol tangential to the left of the circle, as in the letter p; and so on.

Nathan Millman

Ortho Research Foundation,
Raritan, New Jersey

“Abominable Snowman”

Recent accounts [Science 123, 1024 (1956); 126, 858 (1957)] have given various interpretations of the Abominable Snowman or Yeti of the Himalayas. This note on the same subject is directed toward pointing out some aspects of the legend which have been overlooked. The interpretation that tracks in the snow ascribed to the Yeti may be made by man is valid in some instances, but it is clear that footprints cannot logically be attributed to even the most solitary hermit when they are made in remote glaciated terrain at great altitudes where local inhabitants simply would not travel.

The explanation that the Yeti tracks are made by red bears raises a number of difficulties. The footprints, such as those photographed by Eric Shipton in

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SCIENCE, VOL. 127
1951 (1), do not resemble bear tracks. Frequently, genuine red bear tracks have been attributed to the Yeti, but when photographs of these tracks have been examined, the bear origin has been clearly established (2). Perhaps the greatest difficulty with the bear theory, and the point most often disregarded in statements concerning Yeti tracks, is the fact that the high-altitude red bear of the Himalayas (Ursus arctos isabellinus) is found only in the western Himalayas, whereas the origin of the Yeti legend and the source of all “genuine” Yeti tracks is in the eastern Himalayas. There is a fairly striking faunal difference between these two regions, and it is not legitimate, nor is it good zoogeography, to attempt to discredit the legend on evidence obtained from the western Himalayas or the plateau of Tibet. The Abominable Snowman, presumably, has no business in these parts.

Prior to the advent of the eastern Himalayan Sherpas into all sections of the Himalayas as members of expeditions, the mountain peoples from Kash- mir to Kumaon had apparently never heard of the Yeti, although they have many other legends. In the eastern Himalayas, from the Everest area through Sikkim, residents of the high valleys continually describe the Yeti (in Sherpa, ye means high rocky places; ti or te or teh means a sort of being, perhaps a dwarf but not necessarily a bear) as a bipedal creature with reddish hair, varying in height from four to six feet. Their description fits, in many ways, a bipedal ape, although these people should have no certain knowledge of apes. It is improbable that the Sherpas, who are fine observers and who have a good acquaintance with bears from their frequent travels in Tibet, would repeatedly confuse a bear standing on his hind legs with the Yeti which they describe. Furthermore, in the high valleys of the eastern Himalayas, there are no reports of bears. The forest bear Selenarctos thibetanus has not been reported above tree line, much less at 19,000 or 20,000 feet. It is conceivable and possible that the bear of the eastern Tibetan plateau, the so-called blue bear, Ursus arctos pruinosus, may occasionally cross over the main crest of the eastern Himalayas, but, if so, this migration has not been reported, and the observer Sherpas deny it. Essentially there is a problem of interpretation involving footprints, which, although they do not resemble bear tracks (and are bipedal over considerable distances, unlike single or overlapping bear tracks), are alleged to be caused by bears in localities where bears are not known to exist.

That the tracks, or at least the sources of the legend, may stem from Himalayan langurs does not seem likely or pertinent. These forest monkeys are well known to
the mountain peoples, and the Yeti footprints can scarcely be confused with langur tracks. That the unique footprints may be the result of the high-altitude effects of evaporation and sublimation is not borne out by fresh Yeti tracks, where some detail of the foot is clear. High-altitude footprints do enlarge and may alter in shape, but this obvious alteration, which may surprise the casual traveler from the lowlands, is promptly recognized by an individual with experience in snow at high altitudes. It is not correct to assume that only the naive have seen the tracks, and it is equally erroneous to assume that the Yeti is only the imagined maker of all sorts of ablated footprints.

There has been a curious silence in the scientific literature concerning the two unusual scalps found in separate monasteries in the Khumbu region of eastern Nepal. A mammologist of the Zoological Survey of India, Biswanoy Biswas, has examined the scalps, and it has been demonstrated that they are not artifacts (3). Photographs of the scalps are quite remarkable in that they indicate a somewhat conical occipital extension, as if the skull possessed prominent temporal and nuchal crests. There is in the scalps the distinct suggestion of a large anthropoid ape. Coincidentally, the footprints photographed by Shipton closely resemble a cast of a foot of the mountain gorilla made by Carl Akeley in East Africa (4).

This cast, which was made on a dead specimen, exhibits a prominent hallux somewhat proximal to the remaining toes and perhaps more adducted than it would be in life. The line of toes arches in a slight semicircle, with the fifth digit close to and somewhat beneath the fourth digit, so that it could be inconspicuous in a footprint. The sole and heel of the foot are broad, with the lateral and medial borders approximately parallel. The general outline, the relationship of the hallux, the position and angle of the toes, and the inconspicuous fifth digit strongly suggest the Yeti footprint. Indeed, there are no other footprints which can approach the likeness of the Yeti track. Although it is true that foot impressions in the snow are open to wide subjective interpretation, it would seem to be a conservative assumption that the Yeti track, as it appears in good photographs, resembles Akeley’s gorilla cast much more than it does any normal footprint of a bear.

In addition, there are reports of reversed “knuckle” prints such as might be made by an ape and, in fact, there are all sorts of temenuous indications from various Yeti tracks which can be interpreted to point toward the ape origin of the footprints. Among the apes, the mountain gorilla sometimes inhabits relatively high altitudes (its presence on snow fields has been recorded) in an alpine ecological zone not unlike that found in the Himalayas. The zoogeographical status of the eastern Himalayas as an area where relictual genera are frequent suggests that the existence of a relictual high-altitude ape with relatives in the tropics of Africa and Southern Asia is not an illogical supposition. Similar distributions are found among other mammal groups which at one time were widespread in Asia.

Whereas it is perhaps presumptuous to assume, at this time, that the Yeti is in reality some large anthropoid ape, it seems that this possibility has not been eliminated or sufficiently considered in the current arguments of the Yeti critics.

LAWRENCE W. SWAN
San Francisco State College,
San Francisco, California

References

I certainly have never denied the possibility of the existence of an “abominable snowman,” whether it be a giant ape or some other unknown creature. I am only adhering to a basic tenet of scientific procedure when I ask for something in the way of positive proof of its reality. Unfortunately, those who claim to have seen the “snowman” seem never to have a rifle at hand, nor even a camera. Inference and argument are entertaining and admittedly suggestive; but the real proof of the pudding is in the eating thereof. Collateral evidence, such as footprints, is subject to diverse interpretations. In this connection, I cannot help but recall the “orang pendek” and the “Loch Ness monster.” If someone supplies me with the cadaver of an undoubted “snowman,” I will be only too glad to dissect it and report, to the best of my ability, on the creature’s zoological affinities. Until such proof of its existence, or other proof which is just as convincing, is at hand, I reserve the right to be skeptical. Of particular pertinence in this instance is the observation of W. K. Brooks that “suspended judgment is the greatest triumph of intellectual discipline.”

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Meetings

Laurentian Hormone Conference

The 1958 Laurentian Hormone Conference of the AAAS will be held at Blaney Park Resort, Blaney Park, Mich., 7-12 September. Investigators interested in attending this conference should make application to the Committee on Arrangements of the Laurentian Hormone Conference, 222 Maple Ave., Shrewsbury, Mass., no later than 12 May. A conference rate of $12 per day per person is extended to all invited participants. Attendance is limited to invitations issued by the Committee on Arrangements. The following program has been arranged:


Aldosterone Chemistry and Physiology: “The physiological factors which influence the secretion of aldosterone,” Gordon L. Farrell, Western Reserve University, 10 Sept.; “Aldosterone functions in man,” F. C. Bartter, National Heart Institute, 10 Sept.

Hormones and Metabolism: “Effects of steroids on metabolism of lymphoid tissue,” A. White, Albert Einstein College of Medicine, 11 Sept.; “Central nervous system factors in the regulation of endocrine secretion,” John W. Mason, Walter Reed Army Medical Center, 11 Sept.; “Recent studies on secretin and cholecystokinin,” Erik Jorpes and Viktor Mutt, Karolinska Institute, 11 Sept.

“Cortisone and some of its properties,” David Greep, National Institutes of Health.


Australasian Radiation Biology

The second Australasian Conference in Radiation Biology will be held at the Cancer Institute, Melbourne, Australia, 15-19 December. Papers on relevant subjects are invited. Titles and a 250-word abstract should be received by 31 July. Further information may be obtained from the convener, Dr. J. H. Martin, Physics Department, Cancer Institute Board, 483 Lt. Lonsdale St., Melbourne, Victoria, Australia.

American College of Cardiology

The American College of Cardiology will hold its seventh annual meeting at the Chase–Park Plaza Hotel in St. Louis, Mo., on 20-24 May. The general topic will be “Metabolism of the Heart in Health and Disease.” The scientific pro-
The program will consist of symposia, panel discussions, fireside conferences, and lectures on clinical and basic research in cardiac metabolism, with particular emphasis on cardiac hypertrophy and the effects of exercise and physical stress on cardiac function.

George R. Meneely, Nashville, Tenn., will preside over the meeting jointly with John S. La Due, chairman of the scientific program; Seymour Fiske, general chairman; and Edward Massie, chairman in charge of local arrangements. The program may be obtained from Dr. P. Reichert, Secretary, Empire State Bldg., New York 1, N.Y.

Scientific Study of Sex

The Society for the Scientific Study of Sex will hold its first annual meeting on 8 November at the Barbizon-Plaza Hotel in New York. For details write Robert V. Sherwin, 1 E. 40 St., New York 17, N.Y.

The society has been organized to foster interdisciplinary exchange in the field of sexual knowledge. The aim of the society is to bring together scientists working in the biological, medical, anthropological, psychological, sociological, and allied fields who are conducting significant sexual research or whose profession confronts them with sexual problems.

The SSSS will hold periodic scientific meetings for the presentation of research papers. It will organize symposia, seminars, workshops, conferences, and so forth, to consider theoretical and practical problems in the sexual area. It will also publish a journal devoted to relevant original studies and reports.

Membership requirements are as follows: for fellow, a doctor's degree or its equivalent in one of the biological or social sciences, plus outstanding contributions to sexual knowledge; for members, a graduate degree or its equivalent in one of the biological or social sciences plus contributions to sexual science—or significant contributions to sexual science. Further information concerning the society and its activities may be obtained from R. V. Sherwin.

Canadian High Polymer Forum

The eighth Canadian High Polymer Forum is to be held 12–14 May at MacDonald College, Quebec. On 12 May the guest speaker, Professor Gee of the University of Manchester, will address the forum banquet on “Predicting Polymer Properties.” Reservations for accommodation in the college dormitories are now being accepted by Dr. E. B. Bagley, Central Research Laboratory, Canadian Industries Limited, McMasterville, Que.

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Society Elections

- **AAAS Alaska Division**: pres., Robert Rausch, Anchorage, Alaska; v. pres., Edward L. Keithahn, Juneau, Alaska; sec., Willetta B. Matsen, Box 960, Anchorage, Alaska; treas., Clyde Beers, College, Alaska. The representative to the AAAS Council is Victor P. Hessler, College, Alaska.

- **Society for Experimental Stress Analysis**: pres., E. Wenk, Jr., Southwestern Research Institute; sec-treas., W. M. Murray, Massachusetts Institute of Technology, Cambridge, Mass. The vice presidents are W. R. Campbell, General Electric Company, and B. J. Lazan, University of Minnesota. The representative to the AAAS Council is Miklos Hetenyi, Northwestern University.

- **Society for Industrial and Applied Mathematics**: pres., Thomas H. Southard; sec., Donald B. Houghton, 294 Western Way, Princeton, N.J.; assistant sec., T. N. E. Greville; treas., Robert J. Bickel. The vice presidents are Brocken McMillan and Donald L. Thomas, Jr. The representative to the AAAS Council is Mina Rees.

- **Tennessee Academy of Science**: past pres., Isabel H. Tipton, Department of Physics, University of Tennessee; pres., Arlo I. Smith, Department of Biology, Southwestern University; pres-elect, Robert T. Lagemann, Department of Physics, Vanderbilt University; sec., Wendell G. Holladay, Department of Physics, Vanderbilt University, Nashville, Tenn.; treas., Harris J. Dark, Department of Mathematics, Middle Tennessee State College. The representative to the AAAS Council is Clinton L. Baker, Department of Biology, Southwestern University, Tenn.

- **Society of American Bacteriologists**: pres., Harry Eagle, National Institutes of Health; v. pres., P. R. Edwards, Enteric Bacteriology Unit, Chamblee, Ga.; sec., E. M. Foster, 311 Bacteriology, University of Wisconsin, Madison 6, Wis.; treas., John Hays Bailey, Sterling-Winthrop Research Institute, Renselaer, N.Y. The representatives to the AAAS Council are R. E. Hungate, University of California, and S. Mudd, University of Pennsylvania.

- **American Society of Criminology**: pres., John P. Kenney, University of Southern California; sec-treas., William Dienstein, Fresno State College, Fresno 26, Calif. The vice presidents are Clyde B. Vedder, University of Arizona; Richard A. Myren, Department of Police Administration, Indiana University; Vernon Fox, Florida State University; and Donal E. J. MacNamara, New York Institute of Criminology, who is also representative to the AAAS Council.

Forthcoming Events

May


8-10. Illinois State Academy of Science, 51st annual, Urbana. (R. A. Evers, Illinois Natural History Survey, Urbana.)

11-16. Social Welfare, natl. conf., Chicago, Ill. (National Conf. on Social Welfare, 22 W. Gay St., Columbus 15, Ohio.)

12-14. High Polymer Forum, 8th Canadian, Ste. Anne de Bellevue, Quebec. (M. H. Jones, Dept. of Chemistry, Ontario Research Foundation, 43 Queens Park, Toronto 5, Ont.)

12–14. Research Methods and Instrumentation Symp., 8th annual, Bethesda, Md. (J. B. Davis, National Institutes of Health, Bethesda 14.)
14–16. Society for Experimental Stress Analysis, Cleveland, Ohio. (W. M. Murray, P.O. Box 168, Cambridge 39, Mass.)
14–24. European Acad. of Allergy, The Hague, Netherlands. (EAA, 17 Em- malaan, Utrecht, Netherlands.)
18–24. Sanitary Engineering, 6th Inter-American Cong., San Juan, Puerto Rico. (E. Ortega, Box 218, San Juan.)
19–23. Gas Chromatography, 2nd symp., Amsterdam, Netherlands. (G. Dijkstra, Postbox 114, Vlaardingen, Netherlands.)
20–24. American College of Cardiology, 7th annual, St. Louis, Mo. (P. Reichert, ACC, Empire State Bldg., New York 1.)
25–29. Institute of Food Technologists, annual, Chicago, Ill. (C. S. Lawrence, IFT, 176 W. Adams St., Chicago 3.)
27–31. Thermal and Hydraulic Power Stations, Liège, Belgium. (A. Biron, 1, rue de Spa, Liège.)
28–8. European Federation of Chemical Engineering, 2nd cong., Brussels, Belgium and Frankfurt/Main, Germany. (Deutsche Gesellschaft für Chemisches Apparatwe- sen, Rheingau-Allee 25, Frankfurt/Main.)
29–31. American Acad. of Dental Medicine, 12th annual, Montreal, Canada. (G. Witkin, AADM, 45 S. Broadway, Yonkers 2, N.Y.)
31–8. European Federation of Corrosion, 2nd cong., Frankfurt/Main, Ger- many. (Gesellschaft Deutscher Chemiker, Haus der Chemie, Karlstrasse 21, Frank-furt/Main.)
This new Swiss-designed, precision-machined rotor-stator assembly greatly expands the usefulness of your Waring Blender. The three-blade rotor, forcing material through the eight slots of the stator, gives you a high speed shearing action for faster mixing, homogenizing.

**FIT STANDARD WARING BLENDOR MOTOR BASE**

Designed for use in standard Waring Cloverleaf Jar; supplied assembled in jar or separately for mounting in your own jar.

**BALL MASON JAR MOUNT**

Special mounting fits Waring Blender, holds quart size Ball Mason Jar. Useful for multiple samples or for excluding air from material.

**June**


2-5. American Nuclear Soc., 4th annual, Los Angeles, Calif. (ANS, P.O. Box 963, Oak Ridge, Tenn.)


2-6. Medical Library Assoc., 57th annual, Rochester, Minn. (T. E. Keys, Librarian, Mayo Clinic, Rochester.)


2-7. Mechanical Engineering, 7th international, cong., Scheveningen, Netherlands. (International Mechanical Engineering Cong., 10, avenue Hoche, Paris 8e, France.)


9-11. American Assoc. of Spectrographers, 9th annual symp., Chicago, Ill. (H. J. Hettel, Armour Research Foundation, 10 W. 35 St., Chicago 1.)

9-11. Canadian Federation of Biological Societies, 1st annual, with Canadian Assoc. of Anatomists, Canadian Biochemical Soc., Canadian Physiological Soc., and Pharmacological Soc. of Canada; Kingston, Ontario. (E. H. Bensley, Montreal General Hospital, 1650 Cedar Ave., Montreal 25, P.Q.)


9-12. Microscopy Symposium, 5th, Chicago, Ill. (W. C. McCrone, Jr., 500 E. 33 St., Chicago 16.)


10-12. Astronomical Soc. of the Pacific, annual, Los Angeles, Calif. (S. Einarsen, Leuschner Observatory, Univ. of California, Berkeley 4.)

10-13. Vacuum Techniques, 1st internat. congress, Namur, Belgium. (E. Thomas, c/o CSN/ERM, 30, avenue de la Renaissance, Brussels 4, Belgium.)


11-21. American Soc. of Medical Technologists, annual, Milwaukee, Wis. (Miss R. Matthaci, Suite 25, Hermann Professional Bldg., Houston 25, Tex.)


16-20. Association of Official Seed Analysts, annual, Montreal, Quebec, Canada. (L. C. Shenberger, Seed Lab., Dept. of Agriculture, Chemistry, Purdue Univ., Lafayette, Ind.)

16-20. Molecular Structure and Spectroscopy Symp., Columbus, Ohio. (R. A. Oetjen, Dept. of Physics and Astronomy, Ohio State Univ., Columbus 10.)

16-20. Pacific Div., AAAS, annual, Logan, Utah. (R. C. Miller, California Acad. of Sciences, Golden Gate Park, San Francisco 18.)


18-21. College Physicists, 20th annual colloquium, Iowa City, Iowa. (J. A. Van Allen, Dept. of Physics, State Univ. of Iowa, Iowa City.)

18-22. American College of Chest Physicians, annual, San Francisco, Calif. (M. Kornfeld, ACCP, 112 E. Chestnut St., Chicago 11, Ill.)


19-21. Society of Nuclear Medicine, 5th annual, Los Angeles, Calif. (R. W. Lackey, 452 Metropolitan Bldg, Denver, Colo.)


Equipment

The information reported here is obtained from manufacturers and from other sources considered to be reliable. Science does not assume responsibility for the accuracy of the information. A coupon for use in making inquiries concerning the items listed appears on page 894.

REFRIGERATION CHAMBER provides a temperature adjustable from \(-10^\circ\) to \(-70^\circ\)F for low-temperature metal curing. Volume is 5 ft\(^3\). The chamber is separate from the refrigeration equipment and is connected to the latter by a 6- by 6-in. duct. Net thermal capacity is 500 btu/hr at \(-70^\circ\)F. (Cincinnati Sub-Zero Products, Dept. S973)

COUNTER-TIMER is a completely transistorized instrument with in-line readout. Frequency is measured from 0 to 150 kcy/sec. Predetermined counting may be performed to 9999 with extension in steps of 10, or 100 with external count gating. The instrument may also be used as a preset interval generator, producing delay or interval pulses from 10 \(\mu\)sec to 10 sec in 10-\(\mu\)sec steps. (Potter Instrument Co., Inc., Dept. S988)

OUTPUT PRINTER for use with computers and data-handling equipment is capable of printing 10 lines of 120 alphameric characters per second. Up to 63 different characters are available. (Potter Instrument Co., Inc., Dept. S989)

STOPCOCK provides continuously variable flow adjustment over a broad range of liquid or gas flow. The stopcock consists of a precision-bore cylindrical barrel and a matching plug. A groove is used on the plug instead of the usual bore. Rotation of the plug moves it axially in the barrel, matching the groove to the inlet and outlet. (Wilmad Glass Co., Dept. S990)

DUAL SPECTROMETER permits measurement of the ratio of two isotopes in a radioactive sample. The instrument uses two scalers, two single-channel analyzers, a power supply, a linear amplifier, and a preamplifier. The two scalers, each of which counts one of the isotopes, are both controlled by a single timer. Count preset on one of the scalers allows direct indication of ratio. (Technical Measurements Corp., Dept. S994)

MICROFILM SEARCHING MACHINE searches up to 72,000 16-mm film frames to select the particular frames sought on the basis of coded information recorded on the film alongside each frame and displays the frame on a viewer screen. A binary code of 32 bits is used. Indexing information is established by means of a self-contained keyboard. Depression of