I.Q. level. It is not entirely correct, however, to make the sweeping inference that this may be due to a failure in presentation (p. 684). It has long been the custom for high school counselors to advise the most promising students to take physics and chemistry in preference to biology in high school as part of their college preparation, and also to encourage the less able students to take biology as a science. There is much justification for this practice, since college courses in physics and chemistry are required for the biology major as well, and to have had the preliminary high school course does place the student at an advantage in the more rigorous and competitive college courses. From this, many students have drawn the inference that biology is a second-rate subject. The result has been, in many schools, a rule-of-thumb selection at the start, and it seems probable that many high school students whose original interest in science was in the field of biology have been diverted into physical sciences.

Lourdes

Therefore it is regrettable that, in making his study, Harmon did not also obtain data on counseling practices. No one will deny that the high school biology curriculum needs improving, and concerted effort is being made toward this end by the American Institute of Biological Sciences, but it seems obvious that if biology is to recruit its share of the best students, some changes in the attitude of counselors will also be necessary.

JOEL W. HEDGPETH Pacific Marine Station

Productivity of Ph.D.-bound graduates is indeed a compound of many factors, acting together rather than independently, as Bunce says. Some of the very large schools, in New York City especially, are boys' schools exclusively and also impose aptitude requirements for entrance. The effects are thus confounded. We hope to make further studies which can at least partially control both individual and community factors of importance in this connection.

As for Hedgpeth's comment, no doubt poor counseling by both teachers and counselors contributed to a vicious cycle that produced the situation we observe today. Unfortunately, the counseling practices prevalent in the high schools 15 to 20 years ago cannot be accurately determined now and certainly cannot be measured by reference to selected high school transcripts. The remedy of more rigorous and challenging courses, taught by more capable teachers, would no doubt quickly reorient both counselors and students.

LINDSEY R. HARMON National Academy of Sciences-National Research Council





### How stress conditions may influence ... even alter nutritional requirements

Because of the relationships of one nutrient to another, the investigator must be constantly alert for stress conditions which arise during or are created by experiments.

For stress conditions can change the requirements for certain nutrients .... shading, over-shadowing or even distorting the effects of the variable or factor to be studied. Thus, a "chain of events" which adversely influence findings may result.

For example, one effect of an excess amount of fat added to an otherwise balanced diet is to reduce feed intake. This in turn may reduce the intake of one or more critical nutrients. In such a case, it would be difficult to attach the proper significance of poor performance per se to the fat without first correcting

the deficiency. What other stresses should we con-sider that may be related directly or indirectly to nutrition? The list seems almost endless. But generally, these stresses can be traced, broken down and classified into four major categories: genetic variation; environmental; disease; and post-operative conditions.

Various diseases may affect nutritional requirements. And of course, the results of specific operative procedures often require special changes in the dietary regime.

Often however, the source or cause of a specific stress is more difficult to identify. All factors which could contribute to it, should be considered. To illustrate, an individual's hormonal system un-doubtedly reflects genetic and environ-mental influences. These in turn may mental influences. These in turn may contribute to variations in dietary re-quirements. The problem can be further complicated by the fact that there are numerous ways that changes in the hormonal system may alter dietary require-ments. Each possibility should be considered and explored.

Many stresses must be controlled by the investigator. A big responsibility in-deed. But his job is made much easier with the use of Rockland Diets. For Rockland Diets are formulated to provide a standard source of available nutrients and a balanced intake of these nutrients. Thus, the investigator who uses these diets will find it easier to recognize and control the other factors that may affect the experimental work.

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# **PERSONNEL PLACEMENT-**CLASSIFIED: Positions Wanted. 25¢ per word, minimum charge \$4. Use of Box Number counts as 10 additional words. Payment in advance is required. COPY for ads must reach SCIENCE 2 weeks before date of issue (Friday of every week). week). DISPLAY: Positions Open. Rates listed be-low—no charge for Box Number. Rates net. No agency commission. No cash discount. Minimum ad: 1 inch. Ads over 1 inch will be billed to the nearest quarter inch. Frequency rate will apply to only repeat of same ad. No copy changes. Payment in advance is required except where satisfactory credit has been established. \$40.00 per inch 38.00 per inch Single insertion 4 times in 1 year For PROOFS on display ads, copy must reach SCIENCE 4 weeks before date of issue (Friday of every week). Replies to blind ads should be addressed as follows: Box (give number) Science 1515 Massachusetts Ave., NW Washington 5, D.C. **POSITIONS WANTED Biologist**, Ph.D.; 5 years' university teaching-research; desires academic position. Box 103, SCIENCE. 5/19 Gastroenterologist. Certified in both internal medicine and in gastroenterology. Mayo Clinic and university training. Desires change of loca-tion. Box 108, SCIENCE. 5/19; 26

Immunologist—Medical Microbiologist. Teaching and research experience in academic institutions. Desires academic appointment with graduate fac-ulty; research and teaching. Box 104, SCIENCE. X

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Master's or Ph.D. degree preferred. Respon-sible directly to M.D., Director of Clinical Laboratories. Salary range \$7000-\$10,000 an-nually, experience given additonal considera-tion; 500-bed, short-term general hospital in northeastern Ohio. Contact Director of Clin-ical Laboratories ical Laboratories

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Please write Richard Cordell, Per-sonnel Department

**ABBOTT LABORATORIES** North Chicago, Illinois

19 MAY 1961

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## THE MAN:

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All quailfied applicants will receive consid-eration for employment without regard to race, creed, color or national origin.

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**Faculty of Agriculture** The University of Alberta invites applications for a position in the Department of Animal Science as Assistant Professor (poultry genetics) at a starting salary of \$6600, with excellent pros-pects for advancement. Candidates must have a Ph.D. or equivalent in genetics. Preference will be given to applicants with training in biochemi-cal genetics. Duties, to commence 1 September 1961, will include fundamental and applied re-search on methods of predicting production and reproduction traits in poultry, cooperation in re-search projects on genetic-nutritional-environ-mental interactions, teaching, and limited exten-sion work. Forward applications, accompanied by a recent photograph, curriculum vitae, transcript of aca-demic record, and names and addresses of three references to the Head, Department of Animal Science, University of Alberta, Edmonton, Al-berta. **Closing date: 30 June 1961**. 5/19

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Electron microscopy and histology background. Research congenital deformities, tissue transplantation. Send résumé to Dr. H. Gordon

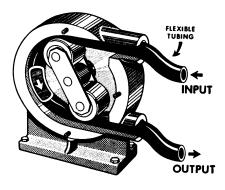
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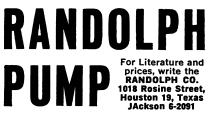
Veterinarian with 2-4 years' experience in poultry virus disease field. Advanced degrees and back-ground in tissue culture systems are desirable. Will direct general tissue culture laboratory and supervise actual laboratory study of new and improved poultry vaccine; chemotherapeutic stu-dies are included. Excellent opportunity for professional growth in expanding midwestern company. Salary range established is \$8500-\$12,000. Starting salary commensurate with ex-perience. Submit detailed résumé to Box 106, SCIENCE. X



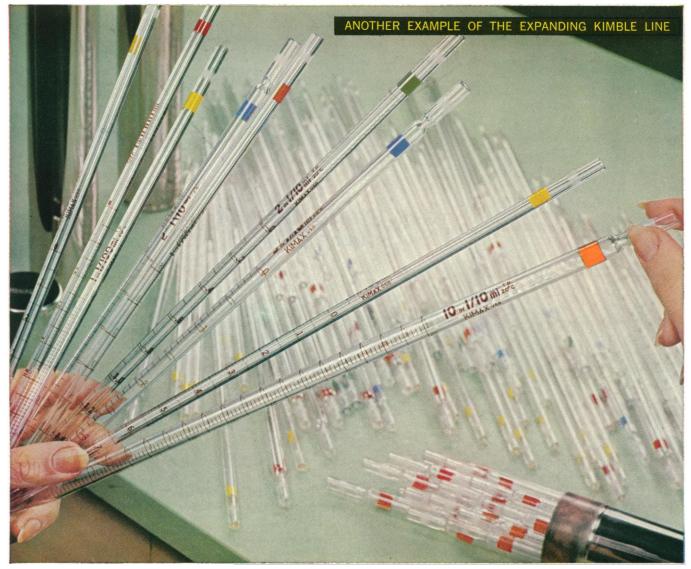
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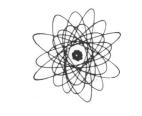
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The intervening years have seen many advances in the theory, design and manufacture of nuclear instrumentation. Many of these advanced instruments have been produced by Nuclear-Chicago more perhaps than by any other company in the field.

Three years ago we undertook an appraisal of nuclear instrumentation needs and of instrument availability. A decision was made to design a new family of instrument modules which, when linked together, would function as integrated counting systems achieving a new standard of reliability and performance.

Our engineering staff approached the problem with no design or production obligations to past practice. They had the singular advantage of a second look — enriched by the perspective of 15 years of experience.

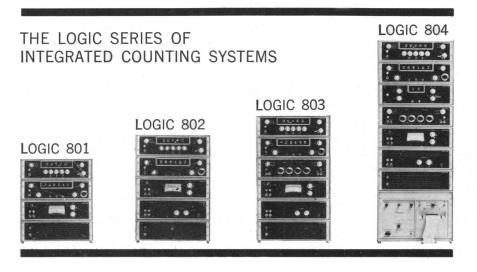
Now, we introduce the result of this three-year program — the Logic Series of Integrated Counting Systems — the second generation of nuclear instruments.

In design and manufacture the Logic Series represents the finest nuclear instruments available. All components are conservatively rated to insure highest continuing performance. Each instrument is guaranteed, without reservation, to perform comfortably within its exacting specifications.

So high, in fact, is the reliability of the Logic Series that the oneyear warranty originally established by Nuclear-Chicago has been extended to two years for these nuclear measuring systems.

The four Logic Series systems and their derivatives offer any high-performance radioactivity measuring function desired.

The Logic 801 Integrated Counting System consists of an electronic timer, scaler, high-voltage supply, cooling base and preamplifier. Its functions are those of geiger counting, integral proportional and scintillation counting. In-line high-speed digital



readout is provided on both the scaler and timer. Add-on instrument modules contribute to the system's versatility and include a digital recorder and choice of linear or logarithmic ratemeter presentation and graphic recording.

The Logic 802 Integrated Proportional Counting System adds to the basic components of the 801 a high-gain, non-overloading linear amplifier to permit integral discrimination between energy levels with gas discharge alpha and beta detectors, and with alpha, beta, and gamma scintillation detectors. Again, add-on modules offer a selection of visual or recorded digital or analog readout.

In the Logic 803 Integrated Spectrometry System, a dualchannel analyzer is added to form a system for precise, high-speed spectrometry work. Counting rate capacity is 10 to 50 times that of conventional systems. The dual analyzer permits simultaneous integral and differential readout from one detector. Two detectors may be used by adding a second linear amplifier. Once again readout can be either recorded or visual, digital or analog, or a combination of all four modes.

Most versatile of the four is the Logic 804, a system incorporating all the components of the 803 plus a stepping programmer and digital recorder. The programmer allows continuous gamma spectrum analysis in 1, 2, 5, or 10% differential steps on one channel and integral or differential counting on the other. The recorder prints both time and count data automatically. Continuous analog readout over any portion of the spectrum can be provided by the system with add-on ratemeters and graphic recorders.

Comprehensive technical literature has been prepared for each of the four Logic Systems, their add-on modules and derivative systems. Please write for your set.



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