THE SPECIES PROBLEM

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The symposium was arranged by the Association of Southeastern Biologists and cosponsored by AAAS Sections F and G, as well as four other societies. Most papers are published essentially as given in Atlanta in December 1955. Dr. T. M. Sonneborn, however, undertook a comprehensive survey of the species problem in the protozoans and particularly in the ciliates. His masterly synthesis comprising more than two-fifths of the volume is a fundamental contribution to the protozoan literature.

This symposium made a solid contribution toward the solution of the species problem. It broadened the base on which to discuss the problem by utilizing new organisms. It led to a clarification of the areas of general agreement among biologists. It presented a clear statement of the various species concepts and frankly stated and enumerated difficulties in their application to different types of natural populations. Finally, it illuminated certain aspects of the ageless species problem that had been neglected previously, and it attempted a statement of still controversial issues. From these papers it should be evident that the species problem is still one of the important issues in biology.

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New Products

The information reported here is obtained from manufacturers and from other sources considered to be reliable, and it reflects the claims of the manufacturer or other source. Neither Science *nor the writer assumes responsibility for the accuracy of the information. A coupon for use in making inquiries concerning the items listed appears on page 54.*

■ RECORDING SYSTEM for strain gages plots strain versus load for 24 to 96 strain gage channels on a continuous paper loop. Digital read-out can also be provided. The paper loop can be supplied in length to match the number of channels being scanned. Individual gage-factor and range-selector controls are provided for each channel. Polarity is automatically indicated, and the full width of the paper is utilized to plot tension or compression. The contact resistance of the switches does not influence accuracy. B & F Instruments, Inc., Dept. 894)

■ HYGROMETER permits remote (up to 100 ft) indication of humidity. Relative humidity in the range 30 to 95 percent can be measured over the temperature range 32° to 180°F. Accuracy of ±5 percent is claimed. The instrument operates electrically and has meter indication. A wide variety of probes is available. (Labline Inc., Dept. 889)

■ SQUIB-ACTUATED BELLOWS MOTOR, 0.32 in. in diameter by 1 in. long, is capable of providing 10 lb of thrust over a 1-in. stroke within an elapsed time of 1 msec. The bellows can be guided around a 90 deg curve. Actuation requires as little as 100 erg at 1.5 v or 0.3 amp. Operating temperature range is −65° to +165°F; the device will withstand shock or acceleration of 20,000 *g*. (Atlas Powder Co., Dept. 881)

■ SURFACE THERMOMETER uses a thermistor as the sensitive element for measurement down to −328°F. Response times are less than 1 sec in liquid and 2.2 sec on surfaces. The instrument is battery-operated and portable. Accuracies of ±0.14°C are claimed. (Atkins Technical, Inc. Dept. 911)

■ X-RAY FILM PROCESSOR automatically develops, fixes, washes, and dries film in sizes up to and including 14 by 17 in. Completely dry radiographs are obtained in 7 min. The 12-film automatic feed magazine of the processor, loaded with the exposed film in a darkroom, may be handled in a lighted room. (Oscar Fisher Co., Dept. 896)

■ PULSE-HEIGHT ANALYZER is a single-channel instrument capable of counting rates greater than 10^6 count/min. Input amplitude range is 0 to 85 v positive. Window width from 0 to 10 percent of range and window level from 0 to 100 percent of range are set by ten-turn controls. Integral or differential operation may be selected with a switch. (Tullamore Electronics Corp., Dept. 898)

■ PLIABILITY TESTER simulates the action of wrapping a paper-like material around an object and measures the material's resistance to this operation. The instrument is portable and self-contained, and it includes a sample cutter. The device operates by measuring the force on a piston required to drive a 10-in.-diameter sample through a ring. Force is read on a calibrated dial gage. (American Instrument Co., Inc., Dept. 899)

■ LIGHT BOX for illumination of transparent or translucent drawings and charts is designed to fit into a desk drawer. Illuminated area is sufficient for 8½ by 11-in. sheets. Fluorescent tubes are used for cool operation, and provision is made for tilting to a convenient angle. (Instruments for Research and Industry, Dept. 900)

■ SEDIMENT-DENSITY PROBE operates on the principle that the scattering and absorption of gamma rays is a function of the density of the medium. Range of the instrument is 20 to 130 lb/ft^3. The device consists of a source, counter, and a lead shield to isolate the counter from the unscattered beam. The instrument is immersion-proof and includes a built-in preamplifier to permit remote recording. Measurements accurate to better than 1 lb/ft^3 are said to be possible with measuring time of 1 min. (Technical Operations Inc., Dept. 901)

■ PRESSURE TELEMETER for studying intraluminal pressures is an ingestible, reusable capsule 20 mm long and 8 mm in diameter. The device consists of a battery-powered, transistorized oscillator, that is frequency-modulated by pressures acting on a diaphragm. An external receiver demodulates the signal for display on an oscilloscope or for recording. Pressures up to 200 cm-H_2O are said to be detected with accuracy of ±3 percent of full scale. Battery life is 72 hr. (Airborne Instruments Laboratory, Dept. 905)

■ ADHESIVE TESTER simulates conditions of production and use of solvent-based and rewettable adhesives such as gummed tape. The tester operates by bonding two surfaces with the adhesive and measuring the strength of the bond by its resistance to shear or peel forces either on a curved or a flat surface. Variables of bonding pressure, film thickness, open time, and closed time are controlled. (Thwing-Albert Instrument Co., Dept. 908)

■ TRANSISTOR CURVE TRACER can display either one curve or a five-curve family. Curves for collector voltage and collector current are displayed for common emitter or common base connection. The instrument is designed for use with a standard oscilloscope. Emitter-base voltage for selected input currents may be measured by using an external d-c meter to characterize points on the input curve. (Curtiss-Wright Corp., Dept. 909)

■ RECORDING ANALYTICAL BALANCE simultaneously records weight and temperature against time. A two-pen strip-chart recorder is used. Samples can be suspended from one or both pans of the balance and weighed in a furnace. The balance is accurate to ±0.1 mg and has a capacity of 200 g. Temperature range is −25° to +525°C or −50° to +1050°C. Both weight and temperature readings are linear. (Wm. Ainsworth and Sons, Inc., Dept. 910)

■ AIR DRYER is designed to supply extremely dry air in quantities up to 20 ft^3/min. The dryer operates on 110-v a-c power and requires an air supply of pressure from 5 to 150 lb/in^2. The equipment is designed so that flow of air will not be interrupted during power failure. Weight is 68 lb. (McGraw-Edison Co., Dept. 915)

■ PULSE-HEIGHT ANALYZER features double-pulse resolution better than 0.5 μsec and a fixed dead time of less than 0.1 μsec. The instrument accepts average count rates greater than 10^5 count/sec without baseline distortion or use of temporary storage. Channel width is stable to better than ±1 percent/wk, and base line shift is less than ±0.1 percent/wk. A count storage of 10^6 is provided in each of 20, 1-volt channels by a combination of glow-transfer tubes and mechanical register. Provision is made for recording or for cathode-ray tube display of the spectrum. Window position range is 5 to 105 v. (Eldorado Electronics, Dept. 916)

■ ISOLATION COMPARTMENT for manipulation of equipment, biological, chemical or slightly radioactive material, is designed to be expendable. The compartment is constructed of heavy plastic sheet with all seams and plastic gloves welded by high-frequency machines. Molded zippers permit access to contents. Material for operation can be inserted through a zippered air lock. Separate inlets are provided for inflating the air lock and the main chamber separately, and a differential pressure may be maintained between the two. (Torsion Balance Co., Dept. 923)

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