arbitrary regulations which prevent the use of the potential talent we have. This will be difficult if not impossible under present conditions. The professional educationists now have political control of (i) the curriculum (what shall be taught) and (ii) teacher certification (who shall teach it). Published articles by educationists indicate that efforts to reduce this control will be resisted.

The United States education problem is too big to depend on the efforts of only one department (the education department) of the universities. The policy-making level and control must be widened to include representatives of all departments of American education—all university departments and all the learned professions. The narrow and limited background of the education department alone (or of any other single department) is inadequate. This plan has been tried and found wanting; yet California teachers wishing to improve their status encountered the following situation at the University of California (Los Angeles) summer session for 1958, as set forth in the official catalog: Department of education and physical education, 70 faculty members, 102 courses; department of physics, 6 faculty members, 14 courses; department of mathematics, 7 faculty members, 20 courses; department of chemistry, 8 faculty members, 11 courses. It is clear, here, that mere money and salary increases alone will not further the parliament's aims regarding improving science teaching. The education department would get ten times as much money as the mathematics department—and with no improvement in the teaching of mathematics.

The situation calls for a realistic, practical, and aggressive program by the American Association for the Advancement of Science, directed toward informing the public and appropriate officials that (in most states) the education department courses required for high-school teaching credentials are unnecessary and excessive and that the maintenance of such requirements is an obstruction to improved science education and teaching.

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Too Many Authors

A letter from Z. I. Kertesz [*Science* **128**, 610 (1958)] deplores references which use "*et al.*" after the first author's name, particularly when more than three authors are involved. There is cogent argument that, for anything short of a monographic treatment, the indication of more than three authors is not justifiable, in general. In fact, minor contributors should be listed—and their spe-

cific contributions shown—in the acknowledgments.

A particular report comes to mind that appeared under merely one author's name. It describes the properties of a rare mineral which had not been adequately characterized or previously reported from localities outside of Russia. This article was written by a mineralogist who used data obtained by a chemist (analytical determinations), a physicist (electron micrographs), and two spectroscopists (minor components).

This six-page article might have had five authors, but the fact remains that the over-all responsibility for evaluating the data depended upon a single individual, the mineralogist.

In many instances the only justification for the use of more than three authors' names seems to be the accumulation of bibliographical credit for minor contributions. This situation, if abused—and it has been—can readily become ridiculous. It is discouraged, to some extent, by the use of *"et al."* in citing papers that are overloaded with authors.

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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 1166.*

■ FLOWMETER of variable-area type is available in standard models with capacities ranging from 0.0001 to 30 gal/min for water. In operation a float rises and falls in a precision-bore glass tube, exposing more or less of a V-shaped orifice. The shape of the orifice makes float height directly proportional to flow rate. Glass models operate at pressures to 250 lb/in.^{2} at 70°F. Operating pressures to 1000 lb/in.^{2} are permitted by stainless-steel jackets with magnetic readout. (C-Mar Corporation, Dept. 437)

■ PHASE-SEQUENCE INDICATOR attaches to power leads of a three-phase system to indicate phase sequence by glow of a lamp corresponding to the existing sequence. The device operates at voltages from 104 to 480 v and at frequencies from 30 to 1000 cy/sec. (Opad Electric Co., Dept. 445)

■ ULTRAVIOLET CHROMATOGRAPHIC ANALYZER for petroleum analysis employs eight 3-ft-long adsorption columns. Ultraviolet illumination is provided by fluorescent tubes built into a sliding, counterweighted viewer. When the column zone boundaries have been determined, their locations are recorded on a strip chart marker pen actuated by a foot pedal. (Jarrell-Ash Co., Dept. 446)

■ MERCURY LEVEL SENSOR permits automatic control by sensing the level of mercury inside the glass tubing of laboratory thermometers, manometers, and barometers. An oscillator that clips to the glass tube stops oscillating and actuates a relay as a result of the increase in capacitance caused by the rising mercury. For a conventional thermometer, (−10° to +200°C, 12 in.) sensitivity is equivalent to 0.4° to 0.6°C. (Instruments for Research and Industry, Dept. 451)

■ VACUUM GAGE of the Bayard-Alpert ionization type is furnished with either a nonburn-out iridium filament or a double tungsten filament. The thoria-coated iridium filament does not oxidize, and thus the gage is immune to destructive effects of air. Vacuum from 1 μ to 2×10^{-10} mm-Hg can be measured. (Veeco Vacuum Corp., Dept. 452)

■ INFRARED SPECTROPHOTOMETER, a fully automatic, continuous-scanning instrument of the grating type, offers high resolution, variable scanning speed, repetitive scanning, recording with variable abscissa and ordinate expansions,