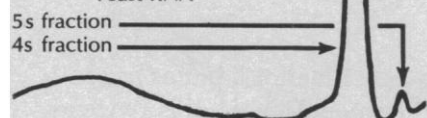


recover purified gel zones

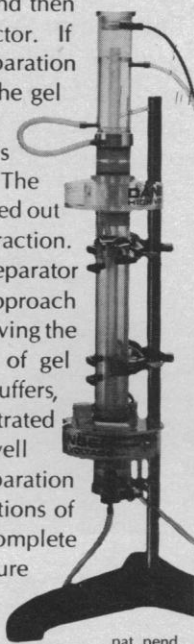
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The authors find horses represented rather late. The Indo-European reconstruction **ekyo-* (Latin *equus*) is clear and certain, but morphologically the word seems to be not a simplex, but a derivative of something else. Moreover, the noun is a so-called thematic stem (Latin second declension); this is recognized as representing a rather recent layer of noun formation in the pre-history of the Indo-European language.

The structural linguistic chronology strikingly parallels that indicated by the radiocarbon measurements.

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References

1. The taboo on eating goat observed by the Roman priest of Jupiter [see R. E. A. Palmer, *Homenaje a Antonio Tovar* (Editorial Gredos, Madrid, 1972), pp. 341-347] may reflect an older, more general abstinence.

Remedial College Courses

In his editorial of 28 July 1972 (p. 297), Arnold B. Grobman contends that disadvantaged students will be educationally short-changed if they are given college credit for "remedial courses." Yet he nowhere defines such courses other than by allowing the reader to infer that they are courses which, if credited, lead to graduation "on a basis different from that used for other college students."

Two points need to be made. First, nearly every college student already is graduated on a basis different from that of every other student. Students enter with a wide range of skills and interests. That range increases as a result of the variety of individual abilities and the thousands of individual choices made every year by every student. Grobman posits a homogeneous student body and set of academic standards suddenly fragmented by the introduction of disadvantaged students. A more accurate model is one of a heterogeneous student body where disadvantaged students slightly increase the variety.

The second and more important point concerns the nature of courses which are frequently considered remedial. Almost every student, regardless of ability or background, takes at least one such course.

Most colleges require freshmen to take a basic course in expository writing. Yet many faculty who teach freshman English courses believe that students should have mastered writing skills in

high school, and that such skills are requisite to success in most other college courses. The typical freshman English course is remedial in the common use of the term. Should students therefore be denied credit?

The curricula in sciences and mathematics in most colleges is tightly articulated. Yet students typically enter those curricula at different points and for different reasons. For example, a student might enter a sequence of calculus courses at the intermediate level because of prior background, luck on an advanced placement test, poor advice, or sheer nerve. Does that make introductory calculus remedial?

Most colleges require students to develop some skill in a foreign language. Yet many freshmen have already studied or learned a language. Students enrolled in a typical introductory college language course may be taking their first language instruction, want to learn a second or third language, have some previous background but are unable to handle more advanced work, need the skill for further study, or are simply trying to meet a requirement. Is introductory foreign language study remedial? If so, for what category of student?

The concept of remediation is so complex there seems only one way to apply it in a nondiscriminatory way to all students—define a remedial course as one which prepares a student to pass an examination required of all applicants prior to their admission as regular students. Only a definition such as this allows college officials to grant or deny credit without capriciously categorizing either certain students or certain courses as disadvantaged. In the absence of such a procedure, every high school graduate should receive full college credit for every course taught at the college.

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In an earlier editorial (29 Oct. 1971, p. 457), I suggested that on several campuses the result of the enrollment of a significant number of disadvantaged students could be described as a tendency toward a bipolarity of the student body. I think this a more useful portrayal than that of a slight increase in the variety of a heterogeneous student body. Remedial courses, therefore, may play a somewhat different role on such campuses than they did in the past.

My editorial of 28 July was not ad-

ressed to the definition of remedial courses, important as that matter is, but, rather, to the question of awarding college credit for such courses, however defined. Dean Beach's recommended definition is a good one, and it could be made operational by utilizing proficiency tests and counseling interviews as a replacement for, and an extension of, entrance examinations.

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Emergency Core Cooling

The interesting reports by Robert Gillette on nuclear safety (News and Comment, 1 Sept. through 22 Sept. 1972) move me to comment. I agree with critics that the LOFT project has been set back by misguided direction, both from Idaho Falls and from Washington, D.C.

The question of emergency core cooling, now claimed by some to be the principal safeguard against cataclysmic reactor plant accidents, has gotten completely out of hand. In the early days (before 1960, more or less), the basic safeguard was containment. Emergency core cooling was introduced to prevent fuel rupture or melting in the event of a rupture of the pressure parts of the reactor system. The idea was to reduce dependence on the outer containment structure. There were even those who contended that such a system might permit the elimination of this containment. In a sense, emergency core cooling is like a parachute for an airplane in case the wings fail, or like a fourth leg for a three-legged stool. Uncertainty about the functioning of emergency core cooling should not cause panic about the safety of water reactors.

Rather than spending huge sums and instituting crash research programs, it might be better to evaluate the chances of primary system failure more carefully and institute means to increase the reliability of the system's pressure parts. If we think pipes might fail, we could use multilayer or composite construction, such as wire wrapping. If we think vessels might fail, we could consider layer-built or prestressed concrete as an alternative. In designing airplanes, we ensure against wing failure rather than depend on parachutes. It would be better to abandon elaborate emergency core cooling systems and use them only

to deal with small leaks. The systems in current vogue are very much "Rube Goldberg" designs. We should depend more on pressure parts.

If information on emergency core cooling could be developed in the meantime, without crash programs, without irrelevant questions about quality assurance, and certainly without hysterical reports that say "This test failed. All is lost," it would be of value. We could then decide whether it was worth it to put a fourth leg on the stool.

It is inappropriate to suggest conflict of interest on the part of professionals in industry, who, to a man Jack, have public safety foremost in their minds. Perhaps the scientists who are suspicious of industry should read the Canons of Ethics for Engineers (1). Could the conflict of interest charge apply more to researchers who see their work and status threatened by the abandonment of gigantic research projects?

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References

1. Engineers' Council for Professional Development, 40th Annual Report, 1971-72 (Engineers' Council for Professional Development, New York, 1973).

Clarifying Differences

The comment by Deardorf (Letters, 22 Dec. 1972, p. 1240) that organically grown foods taste better suggests that there might be a chemical difference between organically and nonorganically grown foods. A panel of tasters combined with a team of biochemists should be able to clarify the question rather easily. I offer my services as one of the tasters.

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Hedges and Deardorf are the soul of reasonableness in their defense of "organic gardening," and we all could applaud if the movement's main concern were the misuse of technology. But for the more fervent members, the spiritual leaders, its thrust is far more than that; it is antiscience. It is an integral part of the counterculture package along with astrology and other mysticisms.

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