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COVER: This homemade LSD press — which punches out dosage units of LSD — was seized from an illicit drug manufacturing laboratory. Forensic chemists often play a key role in uncovering such clandestine operations. See p. 44. (Photo courtesy of the Drug Enforcement Administration)

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LETTERS

U.S. vs. Russian math: Two views

I must compliment Dietrick Thomsen on his Off the Beat article (SN: 6/21/80, p. 399). As an educator, I have been deluged with statistics and numerous arguments concerning today's students and current pedagogy. Mr. Thomsen correctly identified the essential characteristic of *passivity* that is largely the result of our societal conditioning and the *television*. If we persist in fostering this "do-it-for-me" attitude, we only have ourselves to blame for the results — whether SAT scores, creativity or job performance and satisfaction.

David Phoebus
Baltimore, Md.

Thomsen's "Off the Beat" article about the Russians getting ahead of us in math education is reminiscent of the post Sputnick era. Our hysteria at that time ultimately led to the "New Math," one of the greatest disasters ever to strike innocent children. That they have rejected all math, as Thomsen indicates, is certainly to be expected.

Unfortunately, abstract math cannot be avoided at the college level; the engineering curriculum has been loaded with math and "theory" patterned on mathematics (and, to some extent, physics). Indeed, the past 25 years have seen the nearly complete elimination of engineering itself.

Surprising as it may seem, this correlates with great reductions in engineering creativity (see any issue of the IEEE SPECTRUM or the IEEE Institute for infinite detail), and even the great Bell Labs, in going from 4,000 employees in 1954 to about 18,000 today, still advertises their creativity in terms of one patent, on the average, per business day.

It is well known that the Russians have troubles getting their factories to work, and their civilian industry does not appear to come close to meeting basic needs. Some of their space equipment and weapons work after a fashion, but leave much to be desired. Maybe their emphasis on mathematics at the expense of engineering creativity is a contributing factor; certainly our efforts to copy them ever since Sputnick have produced curious results.

If we continue to allow selection for mathematics to reject talent for engineering, we could find ourselves at the Russian level of technology by the end of the century. Perhaps Russian mathematics education should give us pause for thought. It seems to me, however, that our failure to copy them in the public schools, if it could just be extended to engineering colleges, would be cause for rejoicing.

L. F. Goeller Jr.
Haddonfield, N.J.

Genetic incompatibility?

Your article "Heredity: Genes or Experience" (SN: 6/14/80, p. 374) flirts with sensationalism and is misleading to say the least. The results reported by Skolnick et al., while indeed interesting, are certainly not incompatible with contemporary genetic theory.

You mistakenly assume that what you call "vertical transmission" can only be explained by Larmarck's and Lysenko's theory of the inheritance of acquired characters. The fact is that there are numerous examples in which the environment influences the expression of genes. It is also widely recognized that many substances cross the placental membranes from the mothers' blood into the fetuses. Consequently, it is not at all surprising to contemporary geneticists that factors which affect the mother frequently will affect the fetus in the same way, whether the effect be genetic, as in the case of certain hormones, or simply physiological, as in the case of ethanol.

In the experiments reported, it is clear that a stress early in life preconditions a rat to ulceration under a different stress later in life. Whatever these preconditioning factors are, they must either be long lived or continuously produced (unless in some unexplainable way they are learned, in which case their vertical transmission truly would be revolutionary). In either case, should such preconditioning factors be blood born, it would not, then, be surprising to find that preconditioning the mother later preconditioned the fetus.

I do not wish to assert that "20th century genetic dogma" will never need revision, but only that these particular experiments, so far as they have gone, in no way require it.

Thomas Gregg
Oxford, Ohio

Ode to collagenase

It is a bit unfortunate that your recent article on treating slipped discs by enzyme injection (SN: 5/31/80, p. 342) fails to mention that in addition to chymopapain, the enzyme collagenase is also being tested for this purpose.

While studies on humans employing collagenase have only been in progress since 1977, pioneers in these studies such as Dr. John Bromley at St. Joseph's Hospital and Medical Center in Paterson, New Jersey have had extremely promising results. These researchers point to collagenase's clear advantage of being specific for digesting only native undenatured collagen, the stuff which oozes out of a ruptured or "slipped" disc and often presses against nerve tissue to cause the pain.

Whichever enzyme becomes the drug of choice for this form of treatment, I will always owe my good posture and relief from excruciating pain to collagenase.

Gary Calabrese
Cambridge, Mass.

Correction: The rarely used addition reaction Steven Weinreb used to synthesize streptonigrin (SN: 6/7/80, p. 363) is a version of the Diels-Alder reaction that produces a six-member nitrogen-containing ring rather than an all-carbon ring.

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