Letters

Operant Conditioning of POP

In discussing the problem of the information explosion (Letters, 20 Nov.), Newman accurately notes that "we are not dealing with a machine problem but a man problem." The solution, he points out, is not to be found in better methods for processing more and more information, but in "control at the source" through the exercise (presumably by editors of scientific journals) of the "uniquely human skills" of evaluation, judgment, and selection. . . .

Assuming that faith in "publish (quantitatively) or perish" (POP) accurately reflects conditions in the real world, which I think it does, what we have is something approaching a classic operant conditioning experiment: the researcher-rat presses the publication lever as often as humanly possible, because he is periodically reinforced with a pellet of prestige or promotion. What is obviously needed is a change in the reinforcement schedule, so that mere quantitative lever-pressing is rewarded less frequently, while more desirable operants (superior teaching or qualitatively superior papers) are rewarded more often. . . .

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Evolution in France

Commenting upon Camille Limoges's study of the history of the concept of natural selection, Michael Ghiselin "(Darwin as Seen from Paris," Book Reviews, 30 Oct., p. 523) writes that in France "evolution was accepted most reluctantly, and natural selection even now seems to baffle the French mentality." Although the second point is all too true, the first is one more expression of a widespread misconception among biologists in this country. Descriptive (historical) and causal evolution need not be linked. The fact of evolution was indeed accepted *more* readily by the French than by American and other peoples. As for resistance to natural selection, Ghiselin's explanation presupposes that those who resist it understand the process in the first place, which seems self-contradictory. Concerning the French, at any rate, he misses the core of the question when he indicts religious beliefs. During the 19th century most educated Frenchmen, whose paragon was Voltaire, were anticlerical (*1*), and France has unquestionably been less religious than any other Western country since the French revolution.

Basically, understanding natural selection requires thinking in terms of populations, rather than of types; now the French mentality happens to be peculiarly typological. Another cause lay at the root of both relatively prompt acceptance of evolution and refusal of its Darwinian interpretation in France: Lamarck was French and Darwin was a citizen of the nation that was still the latent *ennemi héréditaire* in all hearts, despite a political friendship since 1832 (*2*). Only Anglophobic chauvinism can explain that Lamarck's evolutionary theory, very seldom recollected in France except as a mere laughingstock until Darwin's was heard of, was so resoundingly unearthed and welcomed and suddenly taken seriously. Thanks to Lamarck, evolution could be endorsed and matched against the English as a French invention with a non-English explanation.

As early as the turn of the century, evolution was being ratified by the French government. Huge funds were granted Alfred Giard to found the Laboratoire d'Evolution des Etres Organisés, a separate part of the Sorbonne. A statue of Lamarck was erected in Paris (but no street was given the name of Darwin). Most important, historical evolution was soon going to be introduced in the high school national syllabus (the *causes* of evolution are still presented as mysterious in French high schools today); a result is that evolution just stands to reason to about any Frenchman nowadays. As a Frenchman I was bewildered and at first incredulous when I found out in the United States that there still exist many high school teachers and other well-educated people, not to mention clergy, who oppose evolution on religious grounds. In France a number of clergymen were or are outstanding students of historical evolution, among them Teilhard de Chardin, who left a vision of the cosmos which, no matter how one feels about it, is hyperevolutionistic.

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Notes

1. It was long hard for someone who was not an atheist to get elected to the French academy of sciences. One possibly apocryphal but telltale story has it that an academician proposed at a session, "Let us swear that God does not exist."
2. As late as the early 1900's, boarding drills were still carried out in the French Navy with war cries of "Sus à l'Anglais!" (at the English!)—an example of typology, by the way, "l'Anglais" being singular.

Another Eclipse in 1973

The solar eclipse of 30 June 1973 will produce more than 7 minutes of totality, the longest span to occur until the year 2150. Mali and Niger in the north African desert where it will be best observed have a high probability of clear skies (*1*), and undoubtedly many more scientists than the number who viewed the 1970 eclipse in Mexico will want to observe the 1973 event. For the eclipses of 1966 and 1970, the National Science foundation supplied a remarkable amount of information concerning travel arrangements, local facilities, and scientific programs, as well as astronomical and geophysical data. Due to the high cost of the expedition in 1973, limited funds, inhospitality of the environment, and possible complicated international arrangements, NSF should assume a direct organizational role.

NSF could consolidate the many small expeditions (for example, those consisting of one to three persons with less than 500 pounds of equipment) into one or two major task forces that would travel as a unit to a predetermined site. The individual expeditions would then be able to share site surveys, legal arrangements, travel and support facilities, and save a substantial amount of money and effort in the process. In 1970 successful joint expeditions were carried out by the