spinal canal, the TCA-soluble activity fell to 10%. Boegman *et al.*[2] measured total ^3H activity and obtained wavefronts located 40 mm from the injection site: there is no indication that they followed wavefronts into more distant regions of the sciatic nerve in order to obtain regression lines for determination of velocity. I suggest that the apparent increase in velocity that they report results from measurements made on a stationary wavefront of diffused activity at shorter time intervals for pargyline-treated than for normal animals.

It therefore seems that changes in amine levels produced by pargyline and reserpine have no effect on the velocity of axonal transport of protein. A further study[5] of axonal transport involving manipulation of amine levels requires re-evaluation in the light of these results.

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1 Yu, M. U., Wright, T. L., Dettbarn, W. D., and Olson, W. U., *Neurology*, 24, 237–244 (1974).
2 Boegman, R. J., Wood, P. L., and Pinaud, L., *Nature*, 253, 51–52 (1975).
3 Bisby, M. A., *Expl Neurol.*, 50, 628–640 (1976).
4 Steg, G., *Acta Physiol. scand.*, 61, suppl. 225 (1964).
5 Boegman, R. J., and Wood, P. L., *J. Neurochem.*, 26, 737–740 (1976).

Boegman *et al.* reply—We agree with Bisby[1] that pargyline does not alter the bulk flow of material down the rat sciatic nerve. In our published data[2] we reported on the total radioactivity present in nerve segments and not the TCA-precipitable activity. This led us to conclude that pargyline alters the rate of fast axoplasmic flow.

We disagree with Bisby's comment[1] that axonal flow rates cannot be measured within the first 40 mm since we have shown that puromycin will abolish a front of TCA-precipitable radioactive material within this distance.

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1 Bisby, M. A., *Nature*, 263, 382–383(1976).
2 Boegman, R. J., Wood, P. L., and Pinaud, L., *Nature*, 253, 51–52 (1975).

Large scale extinctions

Thomson's contribution[1] to the search for the cause of major extinctions points out some patterns of temporal diversity change that merit consideration. I wish to note an important inconsistency in Thomson's argument and to discuss some work which contradicts his hypothesis of extinction through specialisation.

Thomson mentions that the diversification portion of his diversity curves are typically exponential, not logistic in shape. Later, however, he describes this diversification as "'species packing' and consequent niche reduction". Such species packing should result in a logistic growth of diversity[2], not the exponential one that he notes. Cisne[3] demonstrated such a logistic increase in the morphological specialisation of Phanerozoic aquatic free-living arthropods and also showed that diversification accompanies this specialisation, as suggested by Thomson. The apparently broad time intervals used by Thomson may prevent the detection of a logistic pattern of diversification.

That specialised taxa tend to become extinct is one of the most plausible assumptions of evolutionary biology and forms the basis of Thomson's explanation. The only test of the extinction through specialisation hypothesis failed, however, to detect any significant correlation between specialisation and evoluntary longevity within aquatic free-living arthropods[3]. Furthermore, Thomson's suggestion that diversification (and specialisation) is "entrained" may inadvertently revitalise the corpse of orthogenesis.

Thomson has pointed out some phenomena of major evolutionary significance—the apparent symmetry of the diversity curves and the existence of "group diversity curves"[5,6]. I agree that it is important to focus on the causes of these phenomena rather than on one striking but merely consequential aspect—extinction.

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1 Thomson, K. S., *Nature*, 261, 578–580 (1976).
2 Strong, D. R. *Proc. natn. Acad. Sci. U.S.A.*, 71, 2766–2769 (1974).
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4 Flessa, K. W., Powers, K. V., and Cisne, J. L., *Paleobiology*, 1, 71–81 (1975).
5 Newell, N. D., *J. Paleontol*, 26, 371–385 (1952).
6 Flessa, K. W., and Imbrie, J., in *Implications of Continental Drift to the Earth Sciences*, 1 (edit. by Tarling, D. H., and Runcorn, S. K.), 247–285 (Academic, London and New York, 1973).

Thomson replies—Flessa[1] has read into my highly qualified statements more than I actually said. I merely stated that the diversity curves "approached" an exponential pattern. I tried to explain the curves only by "analogy" with "species packing" and in any case was working at the genetic level. I do not believe that the patterns of diversification that I described have anything to do with orthogenesis. The question of how one would recognise in fossils the specialisations that could result in extinctions is a very difficult one. Not all specialisations will necessarily be associated with extinction and the reverse is also true. If analogy with any process like species packing can be upheld, it will probably turn out that the crucial specialisations were ones of behaviour and ecology rather than of major external morphology. In that case one might expect morphological specialisation to correlate better with diversification than extinction.

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1 Flessa, K. W. *Nature*, 264, 383 (1976).

The creeping-film phenomenon of potassium chloride solution

Bin-Juine Huang and Jen-Chi Huang[1] state that the creeping-film phenomenon of potassium chloride solutions cannot be satisfactorily interpreted "based on present knowledge of either surface chemistry or transport theory." We believe the phenomenon can be explained by using ordinary physicochemical surface forces such as capillary action in a type of 'wick' effect.

Consider a glass beaker containing a saturated solution of potassium chloride; when some of the solution evaporates, crystals form on the sides of the beaker at the surface of the solution. The solution is then drawn up into micro-fissures and crevices in the crystals by capillary action, and when the solution reaches the edge of the crystal formation it wets the glass surface, and on further evaporation forms more crystals which advances the crystal front causing the creeping phenomenon observed. This is analogous to a 'wick' effect where the KCl crystals act as a wick for the solution. This would explain the creeping which occurs over the brim of the beaker.

A saturated KCl solution will exhibit creeping effects when it wets a substrate surface, and this has been observed in a variety of substances, such as glass, aluminium and lucite plastic (A. M. Yacynych, unpublished). It would be difficult to explain this phenomenon by invoking a specific interaction between the solution ions and the substrate surface, in view of the diverse chemical nature of the substances on which this phenomenon occurs. This creeping effect does not occur when the KCl solution does not wet a substrate surface, as is the case with Teflon (A. M. Yacynych, unpub-