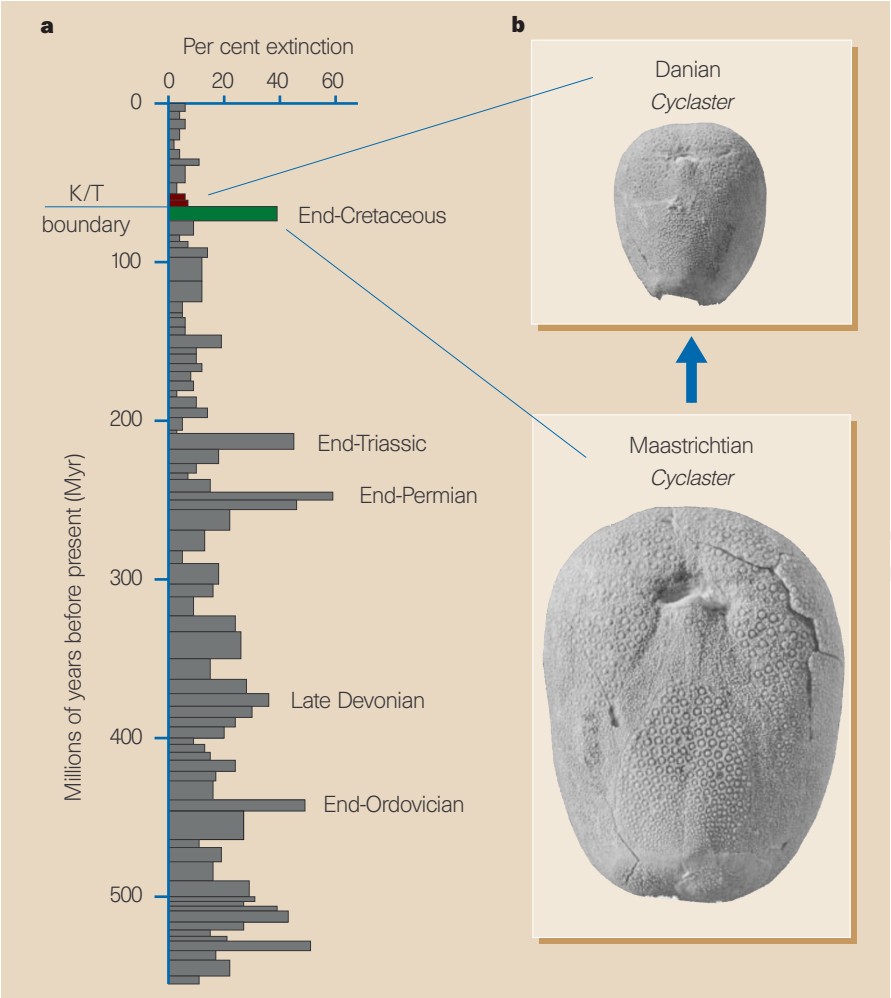

Figure 1 **The mass extinction at the Cretaceous–Tertiary (K/T) boundary.** a, **The extinction intensity of all marine animal genera measured for each stage of the Phanerozoic[13].** b, **Smith and Jeffery[1] have found that sea-urchin lineages that survived the end-Cretaceous mass extinction, one of the 'Big Five' mass extinctions, showed a dramatic drop in body size. The sea urchin *Cyclaster*[14] is shown, the Danian specimen being 2.1 cm in length and the Maastrichtian 3.8 cm.**

were more severely affected (or not) than others, independent of the biological characteristics of the urchins in each habitat. As with other groups[7,8], the authors found no strong correlation with broad biological characteristics, such as whether or not the species lived within the sediment.

Tantalizingly, Smith and Jeffery found that the survival of genera restricted to one region depended strongly on the region. The Americas — posited to have been hardest hit by the immediate impact blast[10] — had fewest survivors, whereas more distant regions were less disturbed. Perhaps the authors have discovered a signature of the impact blast itself, which occurred at Chicxulub in Mexico. However, the pattern may instead reflect the lack of rock types appropriate for fossil preservation in key geographical areas.

The strongest correlate of survival was with the type of sea urchin involved — differences in their biological characteristics played a big part in the fate of the urchins. Specifically, there was a correlation with feeding mode, suggesting that this (or other biological characteristics that correlate with feeding mode) was involved in their survival. Five main feeding types are discernible in fossil urchins. Those that lived in nutrient-poor settings and fed on organo-detritus, without the aid of specialized feeding structures such as tube feet, fared the worst. Generalist omnivores suffered the least extinction.

The most easily interpreted signal in the sea-urchin data is seen when extinctions are ignored. The authors found a pronounced drop in adult body size for most lineages that survived the K/T boundary (Fig. 1b). These data indicate that there was a sustained drop in primary productivity after the K/T boundary, a conclusion also reached by others[11,12]. Combining this conclusion with their other data, Smith and Jeffery suggest that sea-urchin extinction was driven mainly by a nutrient crisis, and that the adult life stage was more severely affected than the larval stages. But the severity of the extinction seems to have depended on the way in which

100 YEARS AGO

In collecting the literature regarding phosphorescent plants, I chanced on an article, by Mr. C. F. Holder, on "Living Lamps," in No. 392, vol. lxvi. (January 1883) of Harper's Magazine. In this article, at page 191, it is said: "In South America, a vine known as the Cipo, when injured, seems to bleed streams of living fire. Large animals have been noticed standing among its crushed and broken tendrils, dripping with the gleaming fluid, and surrounded by a seeming network of fire." Could any reader of NATURE confirm the existence of this Cipo with a phosphorescent sap? Cipo, I believe, is a name for liana, not for vines. If true, the existence of a phosphorescent sap in a superior plant would be of great physiological interest. But no mention of this or a similar case is to be found in the standard works on vegetable physiology. I fear the statement may have as much foundation as the assertion, made in the same article, that among the peasantry of Italy girls complete their gala toilet with diadems of fireflies. – Italo Giglioli, Portici, near Naples, February 18.
From *Nature* 3 March 1898.

50 YEARS AGO

An interesting appointment has been made at Leicester to the newly created chair of mathematics. Dr. R. L. Goodstein, of St. Paul's School and Magdalene College, Cambridge, has been a lecturer at Reading since 1935. He has no less extensive a knowledge of mathematics, as commonly understood, than any of his contemporaries; but it was Wittgenstein who excited and inspired him, and he has made his reputation and won his position by original work on the foundations of mathematics. It is half a century since Russell first insisted that investigation into the principles of mathematics was a task for expert mathematicians, not for philosophers, but hitherto the subject has been one in which a mathematician could not take more than an amateur interest without endangering his professional status. A bad tradition has been shattered at last.
From *Nature* 6 March 1948.