and body-size, the diastolic pressure of the shag being nearly as high as the systolic pressure in the smaller birds. There is no increase in pressures after diving in the birds examined (except diastolic pressure in the black guillemot).

Considering the relation heart-pressure/heart-rate, as appears from Tables 1 and 2, there is no decrease at all in the heart-pressure during diving, although the heart-rate is reduced to about 60 per cent of that before diving. I may also direct attention to the fact that the slightly increased heart-rate after diving (compared with the rate before diving) does not affect the heart pressure at all. The unchanged venous heart-pressures during the three periods referred to suggest that the blood supply to the tissues during diving is kept on the same level as in the non-diving condition. Measurements of the pressures in the arterial heart and the arteries may provide further evidence on how—and where—the regulation takes place.

A full account of this work will appear elsewhere.

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Late-glacial Finds of *Lepidurus arcticus* (Pallas) in the British Isles

IN 1894 Bennie[1] recorded abundant remains of this notostracan in association with arctic plant fossils at several localities near Edinburgh in deposits almost certainly of late-glacial age. He[2] found further specimens at Kirkmichael and near Ballaugh in the Isle of Man. There are also old records from Denmark and Sweden[3]. Many late-glacial deposits have been investigated in north-west Europe in recent years, but *Lepidurus arcticus* has not been found.

I am re-examining the Isle of Man deposits, and have made a special search for this fossil. Washings of full-glacial[4] age from Kirkmichael and of late-glacial (*sensu stricto*) age from near Ballaugh both yielded mandibles which were clearly those of a notostracan. As mandibles were common in the Ballaugh material at a stratigraphical level where Zone II was giving way to Zone III, further samples from that level were washed. Carapace fragments with sulcal spines, apodous segments and telsons with short supra-anal plates (Fig. 1) were found. This type of telson is characteristic of *Lepidurus arcticus* (Pallas)[5]. The fossil material is quite diaphanous, and easily escapes observation unless specially looked for. I sieved the samples with a U.S. 40 sieve. I then placed an aqueous suspension of the material retained on the sieve on a white plate, and inspected it in strong light with the aid of a 7× binocular dissecting microscope.

The same stratigraphical level is exposed in a late-glacial deposit at Neasham, Co. Durham[6], and samples from this deposit yielded notostracan mandibles, carapace fragments and apodous segments, but I did not find any telsons. Samples from Zone III at Mapastown, Co. Louth[7], yielded the same fossils. Re-examination of samples from other late-glacial localities would undoubtedly add many further identifications.

It is thus clear that *Lepidurus arcticus* was widely distributed in the British Isles in late-glacial time.

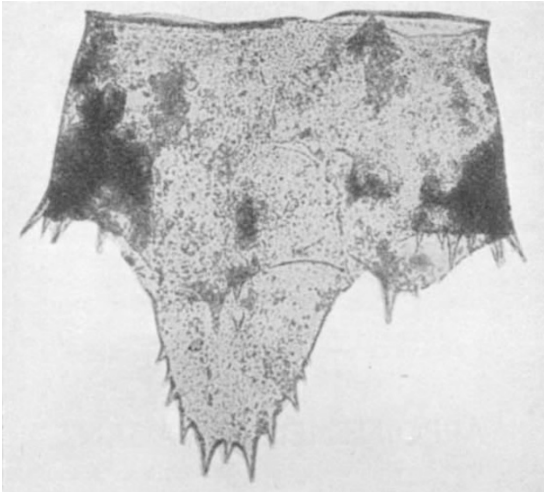

Fig. 1. Fossil telson with supra-anal plate of *Lepidurus arcticus* (Pallas): locality, near Ballaugh, Isle of Man; age, late-glacial, Zone II/III. × 50

To-day[8] there is a relict population in deep lakes in the Scandinavian mountains, where it descends to 58° N.; it descends to 57° N. in the Priblyoff Islands. But the main distribution is circum-polar, between 65° and 80° N., where it occurs in ponds and around shallow lake-margins, and is often very abundant. The late-glacial habitats must have been very similar.

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Chirality

THE recent work on particle parity stresses the need for a suitable term for the property characterizing those three-dimensional forms which are distinct from their mirror images. 'Spirality', even if understood in the sense of a helix, is misleading, since many forms possess a non-superimposable mirror image but no helical axis; for example, scalene spherical triangles, isosceles tetrahedra with scalene faces, and certain types of optically active molecule. Kelvin[1], Larmor[2] and Eddington[3] have used the term 'chirality', from χείρ, hand. Chiral structures or fields are those which exist in two distinct mirror image forms, while non-chiral forms are single, possessing either a centre or a plane of symmetry.

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