

Comparing the shell of Belemnite, with that of Nautilus, we find the agreement of all their

the absence of the nacreous horny sheath, by supposing that a condition of the matrix favourable to the preservation of the calcareous sheath was unfavourable to the preservation of horny membrane; and we may also explain the absence of ink-bags, by supposing that the decomposition of the soft parts of the animal usually caused the ink to be dispersed, before the body was buried in the earthy sediment then going on.

At the base of Golden Cap hill, near Charmouth, the shore presents two strata of marl almost paved with Belemnites, and separated by about three feet only of comparatively barren marl. As great numbers of these Belemnites have *Serpulæ*, and other extraneous shells attached to them, we learn from this circumstance that the bodies and ink-bags had decomposed, and the Belemnites lain some time uncovered at the bottom. These facts are explained by supposing that the sea near the spot was much frequented by *Belemnosepiæ* during the intervals of the deposition of the Lias. Similar conclusions follow, from the state of many Belemnites in the chalk of Antrim, which had been perforated by small boring animals, whilst they lay at the bottom of the sea, and these perforations filled with casts of chalk or flint, when the matter of the chalk strata was deposited upon them, in a soft and fluid state. (See Allan's Paper on Belemnite, *Trans. Royal Soc. Edin.*, and Miller's Paper, *Geol. Trans. Lond.* 1826, p. 53.)

Thus of the millions of Belemnites which crowd the Secondary formations, only the fibro-calcareous sheath and chambered alveoli are usually preserved; whilst in certain shale beds this sheath and shell have sometimes entirely disappeared, and the horny or nacreous sheath and ink-bag alone remain. See Pl. 44", Fig. 1, 2, 3, 4, 5, 6, 7, 8. In the rare case, Pl. 44', Fig. 7, which has afforded the clue to this hitherto unexplained enigma, we have all the three essential parts of a Belemnite preserved in their respective places nearly entire. The ink-bag (c) is placed within the anterior horny cup (e, e', e"); and the chambered alveolus (b b') within the hollow cone of the posterior fibro-calcareous shell, or common Belemnite.