

in Fresh Water, *E E* the Cistern or Vessel containing the Water, *F* the Scale wherein the Weights to counterpoise it were put.

III. Three Queries relating to Shells proposed by Mr. Samuel Dale, and answered by Dr. Martyn Lister. R.S.S.

The Queries.

THere are three things among *Shells*, in which I would be glad of Dr. *Lister's* Assistance, which if you can procure, will be a great Favour, and desire it may be done as soon as possible.

1. *What is the Entalia of the Shops? by what Authors described? under what Names? and how they differ from the Dentalia?*

2. *Of what Shell is the Blatta Byzantina the Operculum?*

3. *There are divers sorts of Purpuræ among Authors, which is that of the Shops? Likewise which sort of Buccina and Umbilici Marini ought to be used in the Shops?*

The Answer to the Three Queries, by Dr. Lister.

1. As to the *Entalia*, I do not remember to have seen any thing in the Shops under that Name. The Descriptions of the *Dentalia* in *Scroder* are very faulty, and both those and the *Entalia* by him should seem to be the Two *Species* of *Dentalia*, which are by me figured. The *Dentalium* being that which is commonly and in Plenty found about the Island of *Garnsey*, and elsewhere.

where upon our Coast ; and is the same with that found in the *Mediterranean*. It is a long, slender, round Pipe, a little bending and tapering, hollow and open at both ends, without any Crack or Flaw, naturally, white at one end, and usually a little reddish ; very smooth and polish'd on the out-side, and from thence and the Figure called a *Dog-like Tooth*. The *Entalium*, or other *Species* of the *Dentalia* is very much longer and thicker than the former, much alike in other respects, save that this is streaked with high Ridges, and mostly of a greenish Colour. This *Species* I guess to come from the *Indies*. Note, that any thing that is wrought into, or channeled, is in the Modern *Italian* called an *Intaglia* ; whence I believe, and the nearness of the Word *Dentalia*, arose those distinctions of Names.

2. To the Second *Quære*, I take the *Blatta Byzantina* to have succeeded the *Unguis Odoratus*, and to have been brought into the Shops in its place. In *Dioscorides's* time the best was brought from the *Red Sea*, viz. the palest and fattest ; the blacker, and less, from *Babylon* or the *Persian Gulf* ; but it seems later Times took up with those found about *Constantinople* ; whence the present Shop *Blatta* had its Name. The Name of *Blatta* is given to this *Operculum*, from the Colour I guess ; as being of a dark Hair Colour, as the common *Blatta Pistoria*, so common in *London*, is ; also this being a broad, thin, flat Beetle, like the Cover.

'Tis true, the same *Dioscorides* says, the *Unguis* was an *Operculum* (πέμα χογγυλίον) like to that of the Purple Fish. He means what was used in his Time ; in which it seems the *Unguis Odoratus* was lost, or was not brought to *Europe*. But it will appear out of the same *Dioscorides*, that the *Unguis* was no *Operculum*. It will be worth the while to make out this Mistake, and consequently the Errors the Moderns have been in to substitute

an *Operculum* of a Marine *Turben* for the true *Unguis Odoratus*.

Take the History of the *Unguis* out of *Dioscorides*. ' It is found, says he, in the Lakes of *India* where *Narde* grows; wherefore the *Conchylia* feeding on *Narde* are *Aromatick*. It is gathered after that the Lakes are dried up with the Summer Heats. He concludes, the *Conchylum* it self burnt or calcin'd, is of the same Efficacy with the *Purpura* and *Buccinum* burnt in the Chapter of *Narde*. He says farther, That the *Indian Narde* grew near the River *Ganges*, that is, in certain Lakes, which the over-flowing of that River caused. Hence it appears (1) That the *Unguis Adoratus* was part of a *fresh Water Conchylum*. (2) Now if it was gathered in the *Nardiferous Lakes* upon the River *Ganges*, how comes it to pass that the same was brought out of the *Red Sea* and *Babylon*. And why should the Shell it self be brought, an useles Luggage so far, as from the River *Ganges* to *Greece*, the *Operculum* rarely being a Tenth part of the Shell it self. Now if it was not used to be brought and exposed to Sale, to what purpose to declare its Vertues, or how could the Experiment be made. I conjecture therefore, that the true *Unguis Odoratus* was something like the half of a *Pectunculus Fluviatilis*, so common in the River *Thames*, of the bigness and thickness of my Thumb Nail, and that for theie Reasons:

1. That the *Unguis Odoratus* seems to have been a *fresh-water Bivalve* or *Muscle*, for that they stay'd till the Lakes on the River *Ganges* were dried up before they gather'd them. Now *Bivalves* are ever buried in Sand and Mud, and never rise up and swim about and float as the *Turbinatè* Snails do, to which latter only the *Operculum* belongs, and which therefore were always, and easily to be caught.

2. He calls this Snail *Conchylium*, and by that general Name distinguishes it from all the other sorts, concerning which he treats in several Chapters; which tho' in general it take in both kinds, as well *Turbinate* as *Bivalve*; yet it does more particularly denote a *Concha* or *Bivalve*.

3. The *Onyx* is expressly reckon'd by *Pliny* amongst the *Bivalves*. For (l. 32. c. 11.) he makes all these Synonymous, *Solen*, *five Aulos*, *five Donax*, *five Onyx*, *five Dactylus*. And again more particularly, (lib. 9. c. 61.) he says, *Concharum genere sunt Dactyli, ab Humanorum Unguium similitudine appellati*. So that in all probability the *Onyx Odoratus* brought more anciently out of the fresh-water Lakes about *Ganges* in *India*, was not unlike the common *Onyx* of the *Mediterranean*, which was of the *Solen* kind.

Whatever the *Blatta Byzantina* of our Shops is, which has certainly nothing of the Characters of the ancient Aromatick *Unguis*; and which in all probability was lost upon the account of the difficult Passage from *Ganges* into *Europe*. I lament its Loss, which I have reason to believe was a good Medicine, from its strong Aromatick Smell; which is much wanting in our *Testaceous Powders*, of which this was one of the number, so much used, and that not without good reason now-a-days, which are all very flat and insipid.

To the Third, The *Purpura* of the Ancients is well made out, and figured by *Fabius Columna*: And it is one of the most common *Murices* of the *Mediterranean Sea*. In this he could not be much mistaken, because, as I remember, he somewhere mentions heaps of those Shells where the *Officinæ Purpuræ* anciently were; and also from the Purple *Sanies* the Fish yields of it self. He mentions one or two more *Species* of *Turbinate* Snails, to be found in the *Mediterranean*, which yield a Purple Juice. Upon the whole matter it is indifferent, what fort

fort of Shell we use in the Shops, if it be to be calcined, provided it be a Sea-shell. Nor do I find either *Dioscorides* or *Ætius* to have distinguish'd betwixt the *Ostrea Purpura* or *Buccinum* calcined; but gives them all the same Caustick Virtue; possibly some one *Species* may have it in a higher degree, as we see the various sorts of Lime-stone, if calcined, differ in strength.

One thing I shall not omit before I end this Paper, because it is now in my mind, that tho' the *Species* of Shell or *Purpura* be scarce known to our Shops at this day, yet the use of the Purple Juice has been by Tradition at least transmitted down to our Times, and kept as a Secret even in these Islands, till Mr. *Cole* got hold of it, and publish'd it. Sir *Robert Southwell* the now President of the *R.S.* told me many years ago, that his own Mother in *Ireland* was famous for marking Handkerchiefs with the Juice of Fish; which Mark would never wash out. And the very Learned Mr. *John Beaumont* informs me of a passage in our *Bedæ's Ecclesiastical History* relating to the *Purple*, as a known thing in his time. The Passage is as follows:

Bedæ, Historia Ecclesiastica Gentis Angl. l. i. c. i.

Variis Conchyliorum generibus exceptis: in quibus sunt & Musculæ, quibus inclusam sæpè Margaritam omnis quidem coloris optimam inveniunt, id est, & rubicundi & purpurei, & hyacinthi & Præsici sed maximè candidi. Sunt & Cochleæ satis superque abundantes, quibus Tinctura coccinei coloris conficitur. Cujus rubor pulcherrimus nullo unquam solis ardore, nulla valet pluviarum injuria pallefcere; sed quo vetustior, eo solet esse venustior.

You see from this Passage the Purple Trade of Dying was used in *England*, and very much valued.

Of Mr. *Cole's* you have a Cut in the *Philosophical Transactions*, No. 178.

Fig. 5. Represents the true *Purpura* of the Ancients by the *Italians* called *Gerusolo*.

