

ON THE  
PURPLE DYE  
OF THE  
ANCIENT TYRIANS.

By Patrick Begbie, Esquire.

IN the amusements and pursuits of the naturalist or antiquary, there is perhaps as much real satisfaction derived from ascertaining a fact, where conjecture and probability have long supplied the defect of clear information, or the recovery of a lost or neglected art, as from a recent discovery of one of similar importance.

In the following simple remarks upon the famous Tyrian Purple, I have thrown together the scanty materials which my retired situation affords me, and what I have ascertained from my own knowledge: and I have to beg your indulgence for my defects in language, method, arrangement, &c. as I shall mention them just as they occur.

It appears that the fact, that this famous colour, for which the Tyrians at a remote period were celebrated, was procured from a shell-fish, designed a *Murex*, has been disputed by our ingenious countryman Mr Bruce. His words are: "Passing by Tyre, two

" wretched fishermen, with miserable nets, having just given over their occupation, with very little success, I engaged them, at the expence of their nets, to drag in those places where they said shell-fish might be caught, in hopes to have brought out one of the famous purple fish. I did not succeed; but I was, I believe, as lucky as the old fishers had ever been. The purple fish at Tyre seems to have been only a concealment of their knowledge of Cochineal; as, had they depended upon the fish for this dye, if the whole city of Tyre applied to nothing else but fishing, they would not have coloured twenty yards of cloth in a year."

This opinion seems to me to be adopted without sufficient attention to some circumstances handed down to us by the ancients. The following account has been given of the discovery of the tinging quality of this animal. A dog, it is said, having caught one of the purple fishes among the rocks, and, in eating of it, stained his mouth and beard with the precious liquor, the circumstance struck the fancy of a Tyrian nymph so strongly, that she refused her lover Hercules any favours, till he brought her a mantle of the same colour. This little anecdote agrees perfectly with the nature and habits of the fish, which I shall endeavour to prove was the true purple shell of the ancients.

This shell (a specimen of which I forward, to be laid before the Society) is found floating upon the surface of the sea. It is thin, brittle, and pellucid, containing an astonishing quantity of this liquor for its size, which it yields spontaneously on being touched. One cannot help regretting, that the publishers of the second edition of the Encyclopedia Britannica should, under the word *Murex*, have given a description of the purple of the ancients, precisely in the words of Mr Bruce. By admitting evidence, which

is merely negative, as they virtually deny the existence of any such fish, they at the same time put to sleep all controversy on a subject of considerable importance: for such we may suppose to be the effect of a publication of eminence and of established character.

We have, however, in opposition to Mr Bruce's opinion, another account, from authority by no means contemptible. "While at Tyre (says the Abbé Murits), my guide pointed out to me a kind of snail; and informed me that those small animals emitted a car-mess liquor. I indeed took up several of the snails, which tinged my hands of a beautiful purple colour; and I observed, on throwing them away, that they shed the liquor in great quantities in the water.

"The Arabs make no use of the liquor which they emit."—*Travels by the Abbé Murits, 1791.*

One cannot help expressing surprise that the Abbé should on this occasion have totally forgot the purple of the ancients; or, if he did recollect how precious this liquor had once been, that he should have suppressed every expression of satisfaction at the discovery.

Besides the Abbé, I have met with only one modern writer who takes notice of the real shell. This is Dr Forrester, who circum-navigated the globe with Captain Cook and Sir Joseph Banks. In his "Observations in a Voyage round the World," he mentions that, when out in a boat, not far I think from the Cape of Good Hope, (for I quote from memory), he found this shell floating on the surface of the water. Although he describes it as a naturalist, he is chargeable with an omission still more surprising than that of the Abbé Murits, for he takes not the smallest notice of the colour emitted.

I shall now mention when and where I saw this singular shell-fish and dye. On the 29th of September 1775, in latitude 26° 46' S. and longitude 9° 3' E. on board the ship Anson, it being light breezes, I perceived the surface of the water covered with innumerable small animals. I rigged a net of gauze upon the end of a long pole, and took up a great variety of different small animals. At last I observed that part of my net was dyed a most beautiful purple colour; and, upon examining it, I perceived that it proceeded from a very small snail-like shell, adhering to one of the other animals I had then in my net. This roused my attention and curiosity to endeavour to procure some more of them; which I soon did, though they were all of a small size. From some remarks in my little journal kept at this time, I see that the ladies who were passengers begged to have a little of the beautiful colour put on their dress. I stained several of their gowns. I find also that the colour remained upon my hands even after washing.

From this day, the 29th September, the quantity of these shells increased every day as we proceeded on our voyage, till the 5th October, when they were in vast numbers. And although it blew a brisk gale, I contrived to pick up many. They were all considerably larger than my first prize, and had each a frothy like substance projecting from their mouths.

I shall add an extract from my little journal, which, being written at the moment of examination, may be supposed to convey the impressions made at the time with some degree of accuracy.

"The shell has a frothy kind of substance projecting from its mouth, which appears to be necessary for keeping it afloat on the surface of the water. By a close examination I can perceive, I think, that the beautiful colour proceeds from a small cluster, resembling small worms, one extremity of which adheres to this

" frothy substance, filling up the whole mouth of the shell, and " projecting some distance over, but does not seem otherwise con- " nected, save very slightly, with the animal within. With a pin " I can remove this substance and worm-like appearance, without " perceiving that the animal is much disturbed, otherwise than by " its shrinking farther into the shell. The quantity of the beauti- " ful liquor that one of these shells emits is really surprising. I " observe that, upon its being first touched, it delivers the colour " in a copious discharge ; and the colour is then approaching nearer " the blue than the red. I find, indeed, that cotton cloth stained " with it is at all times more of the red, than paper or linen stain- " ed with it.

" The quantity of the shells to-day is immense ; the whole sur- " face seemingly covered with them, as far as the eye can reach, " and of a size larger than any I have picked up. Supposing them " therefore to be full grown, it may naturally be inferred, that the " colour they contain will be in perfection, and perhaps more bril- " liant than what I have."

I continued to see these shells every day from the 29th of September to the 27th October, during which time we had run a distance of above 16 degrees of latitude, and above 20 degrees of longitude ; an immense extent of surface, to be not only spotted, but in some places completely covered, with these shells. I have annexed the run of the ship during the time that the shells were seen by me, with the latitude and longitude each day, &c.

As I lay before the Society one of the shells, my description of it will be the less necessary. It is pretty evident, however, that the shell is not a Murex. I am totally at a loss to know why Murex is the name always given to the purple of the ancients ; and I am inclined to suppose that, from this circumstance, many

have been led into the mistake of making experiments on this genus, as also on the *Buccinum*, in order to procure this admired dye of the ancients. It may be amusing to give the substance of one of these experiments on the *Buccinum Lapillus*, or massy whelk.

#### PROCESS.

Shell to be broken with the smart stroke of a hammer, with the mouth downwards, not to crush the body of the fish. The broken pieces being picked off, you see a little furrow in which is a small white vein lying transversely, next to the head of the fish. A stiff horse hair pencil is used to extract the liquor from this vein ; which being painted upon linen, and exposed to a moderate sun, the first colour that appears is light green, then a deep green ; in a few minutes more a watchet-blue ; a little after, a purplish red ; after which it turns a deep purple red. The sun produces no further effect. Washed afterwards in scalding water and soap, and again exposed to the sun or wind, for being dried, a bright crimson is produced, which will continue fixed.\*

From such a process, and from the smallness of the quantity of the liquor to be obtained in this awkward way, it is obvious that this cannot be the shell which furnished the Tyrians with their beautiful dye. Besides, as, from all the accounts offered to the public of the attempts made either by the French or English to discover the Tyrian purple, by means of experiments, whether on this shell or the Murex, it appears that the same tedious process must be used, some apology may be made for the doubts entertained by Mr Bruce, and for the opinion which he has given.

\* Description by Mr William Cole of Bristol, in the Philosophical Transactions for 1684.

The facility with which the shells I have mentioned may be procured, and the quantity of the colouring liquid that each animal furnishes (the large ones nearly a tea spoonful), contrasted with the painful and laborious process above mentioned, afford the most convincing proofs that the shell which I have brought forward is the true purple shell-fish of the ancients.

Another proof occurs to me, which may be easily obtained. On many of the Greek medals are several uncommon plants and animals. Thus, on most of the medals of Cyrene, is a figure of the celebrated Sylphium; and on those of Tyre, the shell-fish, from which the famous Tyrian purple was procured.

The late Dr William Hunter's collection of medals, deservedly esteemed the most complete in Europe, will furnish the antiquary with the means of probation; and it would be no ordinary gratification to compare the figure on the Tyrian medal with the shell now laid before the Society.

Of the great antiquity of the city of Tyre, and its celebrated dye, the following hints may be acceptable.

Old Tyre was built on the continent by the Sidonians, 1252, B. C. It was besieged by Salmanesar 719, B. C.; and by Nebuchadnezzar, 572, B. C. It was taken by the latter after a siege of thirteen years; but the greater part of the inhabitants had previously fled with their effects to a neighbouring island, and founded the present city.

Tyre was separated from the continent by a frith half a mile broad; its walls exceeded an hundred feet in height, and extended eighteen miles in circumference.

The Tyrians refused to suffer Alexander the Great to enter their city; he having desired permission, in order to perform a sacrifice to Hercules. This boldness appears remarkable in a na-

tion of merchants, long unaccustomed to war. But the sources of their wealth and commerce seem to have elevated the courage, instead of softening the character, of the Tyrians. This city, which, in the language of the east, was styled the Eldest Daughter of Sidon, had long reigned queen of the sea.

The purple shell-fish, which is found in great abundance on their coast, early gave them possession of the lucrative trade which it originated, and confined chiefly to the Tyrians the advantage of clothing the princes and nobles in most civilized countries of antiquity.

When Cyrus threatened the Asiatic Greeks, they sent embassies to the mother country, 540, B. C. craving aid. On this occasion, Pythermus, a Phocæn, clothed with *purple*, as a mark of his consideration in his native country, spoke for himself and his colleagues before the Spartan senate. The *purple* known among the Jews, in a very early period, was most probably supplied by Tyre.

In a French author, I find the following observations: "That the Indians in North America dye their cloth of a beautiful colour with the little Murex; that the Emperours sign their edicts with this colour of the Murex; and that it is high treason for any one, except the Emperour, to write with this ink."

I was very anxious to bring home some of this precious and curious liquid in the ship Anson; and, for that purpose, I filled a small bottle with it. But being ignorant how to keep it from putrefaction, and preserve the purity of its beautiful tinge, by the application of any mixture or chymical preparation, I lost it; as a few days of the hot weather soon rendered it offensive and putrid.

There can be no doubt, however, that the Tyrians had methods of keeping this liquid in its original purity; and perhaps also of adding to its native brilliancy.

Upon searching for my drawing of the shell, and some remains of paper and cloth which I had tinged with the purple liquid, I found that I had committed a mistake in saying the 27th of October was the last time of seeing the shell, for the tinged paper, which I forward with this, being dated the 4th November, surprised me, and made another examination of my little journal necessary; where I found the shell continued to be seen by me to the 17th of November, latitude  $18^{\circ} 28'$  N. and longitude  $33^{\circ} 24'$  W. of London.

I have therefore added those days on which I continued to see them to the annexed run of the ship, until the 17th November; not doubting, however, that this animal was spread over a great extent of sea to the northward of us at that time; though, perhaps, they may be principally found in large quantities in the northern latitudes, to the eastward of the place that the ship Anson was then in.

An observation in my journal, of the 5th November, seems important, as it adds something to the very imperfect knowledge we have of this singular animal, which I extract, *viz.*

*"Sunday, 5th November 1775.*

" In the morning, I perceived the water almost covered with the shells I have so often mentioned, in a much greater quantity than I have ever yet seen them, and of a larger size. Much rain, with frequent squalls. Upon its clearing up, not a shell to be seen;—vast numbers of porpoises, and the small peterels called "Mother Carie's Chickens." Here appears sufficient evidence of the shell-fish having the power of removing itself from the surface of the water, by sinking at pleasure; to avoid either the rude effects of the stormy weather, or the voracious depredations of the

other fishes that prey upon it. I have no doubt that, in such cases, it makes use of this liquor to tinge and darken the water (similar to the ink fish), in order to escape the observation of its pursuing enemies; nature having furnished it with this precious liquor, to protect an otherwise tender defenceless race of animals.

On viewing the annexed run of the ship, considering its great extent, it is hardly possible not to be astonished at the idea of the innumerable multitudes of these diminutive animals that we must have passed during the time. But there is still greater reason for wonder, when we reflect, that probably at this period the Atlantic teemed with equal numbers spread over its whole surface, within the latitudes mentioned in my remarks.

It would give me great satisfaction, if my undigested remarks might serve in any degree to remove that cloud which has long hung over the accounts of the famous Tyrian dye; the subject, as far as I know, being scarcely treated of in any well authenticated or accurate narrative, or so obscurely hinted at, as only to serve the purpose of perplexing the inquirer, or of suggesting doubts as to the very existence of the animal.

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#### DESCRIPTION OF THE SHELL.

*Helix-Ianthina.*

Nearly imperforated, roundish, obtuse, diaphanous, and very brittle; aperture dilated behind, with an emarginated lip; one inch

broad and high. In most seas, the animal which inhabits the shell shines in the night, and stains the hand with a violet or purple dye.

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It is to be observed that Pliny, and other ancient writers, give the name of *Purpura* to the shell-fish from which the Tyrians extracted their chief purple dye. This animal, though different from that which they denominated the *Murex*, does not appear to have the same characters with that described by Mr Begbie. The *purpura*, Pliny says, " hath a tongue of a finger long, pointed in the end so " sharpe, and so hard withall, that it is able to bore an hole, and " pierce into other shell-fishes; and thereby she feeds and gets her " living." *Nat. Hist. Transl. by Holland*, B. ix. c. 36. He adds, that it shoots out a long beak *cuniculatum*, like a gutter or hole in the ground, and is writhed in this form in the inside, whence the tongue is protruded. It is also studded with pointed knobs, generally to the number of seven, all the way to its top.

In one circumstance, his description may seem to have some resemblance to that given in the preceding paper. "The *purples* meet " together by troopes in the spring, and, with rubbing one against " another, they gather and yield a certaine clammie substance and " moisture in manner of waxe. The *murices* do the like." This undoubtedly resembles the "frothy kind of substance" mentioned in the paper. Pliny subjoins, however; "That beautiful colour, " so much in request for dyeing of fine cloth, the *purples* have in " the midst of their neck and jawes; and nothing else it is, but a " little thin liquor within a white veine; and that is it which mak- " eth that rich, fresh, and deepe colour of deepe red purple roses,

" *nigrantis rosæ colore sublucens.* As for the reste of this fish, it " yieldeth nothing."

In chap. 38, he informs us, that as the sea-cornet *Buccinum* made no good colour of itself, they usually joined with it the sea purple *Pelagium*, which alone gave too deep and brown a colour.

None of the Tyrian coins in the Hunterian collection, engraved, or even described, by Dr Combe, exhibit a shell of any kind. We learn, however, from Spanheim, that the shell of the Tyrian purple is seen on some ancient Tyrian coins, in the cabinets of Tristan and Seguin, two celebrated French Antiquaries.—*Dissert. de Præst. et Usa Numismatum*, iv. p. 273.

EDIT.

RUN of the ship ANSON, during the time the Purple Shell was seen.

1775.	Latitude.	Longitude.	Dist. in Miles.	Variation.	Ther.	Remarks.
Sept. 29.	26° 40' S.	9° 3' E.	180	18° 0' W.	60°	Purple shell first observed.
30.	25 34 —	9 3 —	64	17 40 —	65	
Oct. 1.	24 34 —	8 52 —	62	17 0 —	64	
2.	23 29 —	7 48 —	83	17 40 —	62	
3.	22 9 —	6 18 —	118		60	Got the south-east trade-wind.
4.	20 30 —	4 3 —	163		60	
5.	18 58 —	1 44 —	170		62	Brisk gale.
6.	17 22 —	0 2 W.	150		64	
7.	No observ.	1 12 —	107		65	
8.	15 59 S.	3 20 —	123		64	
9.	16 0 —	5 14 —		14 16 —	65	Saw St Helena this morning.
				13 35 —		Arrived at St Helena.
21.						Sailed from St Helena.
22.	14 55 —	6 50 —	111		70	
23.	14 4 —	8 6 —	111		71	
24.	13 13 —	9 24 —	88		71	
25.	No observ.	10 41 —	90		71	Sun vertical, yet very cool.
26.	11 29 —	12 6 —	100	11 4 —	72	
27.	10 31 S.	13 32 —	101		74	Last notice of the purple shell in my journal. (Not correct.)

*Additional Remarks from my Journal.*

Nov. 4.	2° 10' N.	24° 10' W.	77		80°	Saw many shells; made an imperfect drawing of one.
5.	4 0 —	24 23 —	85	7° 24' W.	78	Shells more numerous than I have ever seen them.
12.	11 6 —	28 38 —	119	8 0 —	79	Many shells, but not possible to catch any; being a great sea, and great motion in the ship. Many fish.
13.	12 35 —	29 20 —	106		78	Some of the shells.
17.	18 28 —	33 24 —	86	7 0 —	78	Saw some of the shells.*

\* Notwithstanding this being the last remark in my journal of seeing the shells, it is highly probable that they continue much farther.