

Alcyonidium diaphanum. *Transparent halcyonide.*
Thallus nearly round, branched; branches short.

Fucus spongiosus nodosus, *Rail Syn.* 49, 42; *Ger. em.* 1570.
Spongia ramosa altera Anglica, *Park.* 1304.
Alcyonium gelatinosum, *Lin. Syst. Nat.* 1, 1295.
Ulva diaphana, *Huds. Fl. Angl.* 570; *Engl. Bot.* 363.
Alcyonidium diaphanum, *Lamour. Thal.* 71.
Sea ragged staff.

Thallus 6 to 12 inches long; branches irregular, rather acute; sporidia large, yellowish.

β. *flavescens.* *Branches obtuse.*
Ulva flavescens, *Huds. Fl. Angl.* 570.

XXVIII. 53. EPHIDATIA. Lamouroux. *Ephidate.*

Thallus sessile, orbicular, lobed, gelatinous, cellular, greenish; cells long, pentagonal, radiating from a common point, open at top; sporidia elliptical, enclosed in the cells.—Fresh-water.

Ephidatia Gibbsii. *Gibbs' ephidate.*

Thallus sessile, thick, slightly lobed, more or less orbicular, fetid.

Bottom of the reservoir in the Green Park, Mr. Gibbs.

Thallus orbicular or oblong.—This may be the following species, but Lamarck describes the cells of spongilla as irregular; or it may be an alcyonella; I could not, however, perceive any polypi in it, but plenty of sporidia.

XXIX. 54. SPONGILLA. Lamarck. *Spongille.*

Thallus sessile, polymorphous, irregular, cellular and lacunose; cells unequal, formed of membranaceous laminae, scattered without any order; sporidia free, in the cells.

1. *Spongilla pulvinata.* *Cushion spongille.*

Thallus rather incrusting, sessile, thick, convex, slightly lobed; lacunae longish, scattered.

Spongilla pulvinata, *Lam. Hist.* 2, 100.
Ephidatia fluviatilis, *Lamour. Pol.* 6.

Bottom of rivers.

2. *Spongilla ramosa.* *Branched spongille.*

Thallus sessile, branched; branches long, roundish, unequal, rather lobed.

Spongia ramosa fluviatilis, *Rati Syn.* 30, 5.

Spongilla ramosa, *Lam. Hist.* 2, 100.

Spongia lacustris, *Lén. Syst. Nat.* 1, 1290.

Ephidatia lacustris, *Lamour. Pol.* 6.

Bottoms of lakes and ponds.

β. *digitata*. *Thallus* digitate, slightly branched.

Spongia fluviatilis ramosa fragilis, *Rati Syn.* 30, 6.

γ. *gracilis*. *Thallus* and branches slender, branched.

Spongia canalium, *Gmel. Syst. Nat.* 1, 8226.

Ephidatia canalium, *Lamouroux*, 6.

H. SPONGIDIÆ. *Thallus* continuous, gelatinous, formed of interlaced, flexuous, horny fibres or asbestine spiculæ, very porous, absorbing much water; sporidia scattered in the jelly of the thallus.—Yellow or brown, becoming white; when dry tough and flexible.

XXX. 55. TUPHA.

Tuphe.

Thallus fixed, roundish, solid, very porous, leaflike; branches simple or compound; formed of interwoven, bent, horny, reticulated fibres, without any chalklike matter.

a. *Branched, branches simple or compound.*

1. *Tupha oculata*.

Byclet tupha.

Thallus much branched, soft; branches roundish, blunt, dotted with marginal pores.

Spongia oculata, *Ellis Corall.* 80.

Sea-shore.

Thallus 9 inches high, bottom naked, tough, woody; above branched.

β. *elegans*. *Thallus* pale brown; branches divaricating and closing together at top; tips blunt, 4 or 5-cut.

2. *Tupha stuposa*.

Towlike tuphe.

Thallus branched; branches towlike, round, covered with pointed hairs.

Spongia stuposa, *Ellis Zooph.* 106.

Spongia cervicornis, *Pallas?*

Sea-shore.

β. *gracilis*. *Thallus* very slender, beautifully white; branches ascending, very hairy.

γ. *danicormis*. *Thallus* palmate, divaricating, like the antlers of a buck.

3. *Tupha palmata*.

Palmate tuphe.

Thallus palmate, with fingerlike divisions on the edge, and small prominent pores irregularly disposed.

Spongia palmata, Ellis *Keopk.* 189.

Sea-shore.

Texture similar to that of *t. oculata*, but not so soft when dry; pores more numerous, disposed over the whole surface.

4. *Tupha coalita*.

Coalescent tuphe.

Thallus much branched, corky, brittle; branches irregular, distorted, rather compressed.

Spongia coalita, Gmelin *Syst. Nat.* 1, 3925.

Spongia Lycopodium, Esper, 2, 269.

Sea-shore.

5. *Tupha hispida*.

Hispid tuphe.

Thallus branched; branches long, slender, round, two-forked, covered with stiff hairs.

Spongia hispida, Montague in Wern. *Tr.* 2, 81.

Sea-shore.

Thallus a foot long, or more.

β. furcata. *Thallus* with short forked tips.

6. *Tupha dichotoma*.

Two-forked tuphe.

Thallus branched, upright, nearly cylindric, tomentose, covered with small pores.

Spongia dichotoma, Ellis *Keopk.* 187; *Lin. Syst. Nat.* 1, 1290.

Sea-shore.

Thallus brown, long, two-forked, straight, tapering, becoming compressed at the fork, but not so much as *t. oculata*; branches longer and straighter, texture firmer and less woody.

7. *Tupha digitata*.

Finger tuphe.

Thallus branched; branches very slender, two-forked, fingerlike at their tip; surface granulated.

Spongia digitata, Montague Wern. *Tr.* 2, 84.

Bottom of the sea.

Thallus iron-brown at bottom, above pale yellow, not so thick as a straw, slightly compressed, tough, flexible.

8. *Tupha ramosa*.

Branched tuphe.

Thallus palmated and fingered round the top.

Spongia ramosa, Montague Wern. *Tr.* 2, 84.

Sea-shore.

Thallus 5 inches long, stiff, slightly elastic.

b. *Thallus* branched; branches leaflike, on the sides or tips.

9. *Tupha conica*.

Conical tuphe.

Branches numerous, short, flattish, from the sides.

Spongia Conus, *Montague Wern. Trans.* 2, 85.

Sea-shore.

Thallus when dry dark yellowish brown; texture rather coarse; outside covered with short bristles.

10. *Tupha lobata*.

Lobed tuphe.

Branches ovate, clustered.

Spongia lobata, *Montague Wern. Tr.* 2, 85.

Sea-shore.

Thallus yellowish brown, 2 inches high; branches ovate or oblong, from an irregular kind of stem.

11. *Tupha perlævis*.

Very-light tuphe.

Thallus indeterminate; texture close; surface covered with blunt nipplelike prominences.

Spongia perlævis, *Montague Wern. Tr.* 2, 86.

Sea-shore.

Thallus yellow, when dry light brown; texture similar to that of *t. tomentosa*, equally light, not so soft or crumbly, or so pale; nipples 1-8th of an inch long.

12. *Tupha aurea*.

Golden tuphe.

Thallus broad, flat, slightly divided at the tip.

Spongia aurea, *Montague Wern. Tr.* 2, 86.

Sea-shore, covering the stones at low water.

Thallus 2 inches high, 2 or 3 broad, orange-colour, when dry brown; not so much divided as *Ellis's spongia proliferata*.

13. *Tupha rigida*.

Stiff tuphe.

Thallus blunt, rather flat, spreading, irregular, arising from a basis, generally a short stalk.

Spongia rigida, *Montague Wern. Tr.* 2, 87.

Sea-shore.

Thallus about an inch high, orange-colour, which it partly retains on drying if tolerably freed from the parenchyme; texture as coarse as that of common sponge.

β. minor. Smaller branches more numerous and distinct, spreading from a shorter pedicell.

XXXI. 56. SCYPHA. *Scyphe.*

Thallus shooting into tubular processes, either simple or compound, very porous, formed of interwoven, bent, reticulated horny fibres, without any chalklike matter.

1. *Scypha coronata.* *Crowned scyphe.*
Tube solitary; tip crowned with radiating spines.

Spongia coronata, Ellis Zooph. 190.

On fuci and other marine bodies.

Thallus above an inch long, yellowish sometimes a shining, silvery white, not always crowned but covered with spiculæ.

2. *Scypha botryoides.* *Bunch-of-grapes scyphe.*

Thallus minute, ovate, tubular, in bunches covered with radiated spines.

Spongia botryoides, Ellis Zooph. 190.

Sea-shore.

Thallus composed of minute branches, oval like grapes, each open at the tip, as if tubular.—The spines are the *asterias radiata* of Walker.

3. *Scypa papillaris.* *Nipple scyphe.*

Thallus sessile, flat, spreading with scattered tubular tubercles.

Spongia papillaris, Gmel. Syst. Nat. 1, 3824.

Rocks rarely left uncovered by the sea.

Thallus soft, yellow; tubercles sometimes tipped with blue; when dry less soft, brown or gray; surface like gauze.

β. Sowerbeii. Tubercles longer and more numerous.

Spongia compacta, Brit. Miscell. 1, 42.

Bottom of the sea?

4. *Scypa tubulosa.* *Tubular scyphe.*

Thallus tubular, branched, tough; tubes erect, slightly tapering.

Spongia tubulosa, Ellis Zooph. 188.

Spongia fastigiata, Pallas Zooph. 392.

Sea-shore at very low water, and bottom of the sea.

Thallus 3 inches high and 4 or 5 wide, yellow, when dry pale brown or dirty white.

353: 56. Scypha. 2. THALASSIOPHYTÆ. *Pt. cell. aph.*

5. *Scypha foliacea.*

Leafy scypha.

Thallus tubular, much compressed; texture fine, inside finely reticulated.

Spongia compressa, *Fabricius Faun. Greenl.* 448.

Sea-shore.

Thallus an inch long, dull yellow, pendent; from its thinness it may be mistaken for a flustra.

6. *Scypha lævigata.*

Smooth scypha.

Thallus soft, compressible, elastic; texture extremely fine and reticulated.

Spongia lævigata, *Montague Wern. Tr.* 2, 95.

Bottom of the sea?

Texture extremely fine, equal to that of the internal spongy part of some kinds of puff-ball.

7. *Scypha ovata.*

Ovate scypha.

Thallus ovate, wrinkled, tubular; summit crowned with spines surrounding the aperture.

Spongia Ananas, *Montague Wern. Tr.* 2, 96.

Sea-shores.

Thallus minute.

β. *tomentosa.* *Thallus* clothlike.

Upon cellaria scruposa.

8. *Scypha complicata.*

Complicated scypha.

Thallus tubular; branches numerous, most intricately interwoven, and frequently anastomosing.

Spongia complicata, *Montague Wern. Tr.* 2, 97.

On fuci.

9. *Scypha cancellata.*

Railwork scypha.

Fibres in network, inosculationis tuberos, with a pore.

Spongia cancellata, *Brit. Misc.* 131, not of Gmelin.

Thallus yellowish; fibres horny in railwork with large interstices.

XXXII. 57. SPONGIA. Aristotle.

Sponge

Thallus sessile or pedicelled, of a compact or slightly lobed indeterminate form, composed of interwoven, bent, reticulated horny fibres, without any chalklike matter.

a. *Thallus peduncled, concave, funnelshape.*

1. *Spongia infundibuliformis.* *Funnelshape sponge.*
Thallus funnelshape; flexible; surface rather rough; irregular.

Spongia infundibuliformis, *Lin. Syst. Nat.* 1296.
Spongia crateriformis, *Pallas Zooph.* 386.

Sea-shores.

2. *Spongia foliascens.* *Leaflike sponge.*
Thallus stiff, but not woody, arising from a corky base and spreading into a cup; edge slightly cut and indented; pores fine.

Spongia foliascens, *Pallas Zooph.* 395.
Spongia Scypha, *Montagu Wern. Tr.* 2, 107.

Sea-shores.

Thallus about 2 inches and a half high; bowl 2 inches deep, and as wide at top, bottom half an inch wide, pale brown, impervious to light.

b. *Thallus peduncled, flat, funnelshape, simple or lobed.*

3. *Spongia cristata.* *Crested sponge.*
Thallus flat, upright, tender, resembling a cockscomb, pores in rows, small, slightly projecting, along the top.

Spongia cristata, *Ellis Zooph.* 186.
Cocks comb sponge, *Phil. Tr.* 55, 298.

Sea-shore.

Thallus said by Mr. Ellis to have a visible systole of the water in and out of its pores.

4. *Spongia ventilabrisformis.* *Fanshape sponge.*
Thallus fanshaped; fibres reticulated, woody; covered with large spongy pores.

Spongia Ventilabrum, *Lin. Syst. Nat.* 1, 1296.
Sea-fan sponge, *Phil. Tr.* 55, 289.

Sea-shore.

Thallus 10 inches high, a quarter of an inch thick in the widest part, may be seen through if held pretty close to the eye.

5. *Spongia pulchella.* *Pretty sponge.*
Thallus generally compressed and bald; reticulations fine, smooth, soft.

Spongia pulchella, *Brk. Misc.* 87.

Sea-shore.

360 57. Spong. 2. THALASSIOPHYTÆ. *Pl. cell. aph.*

Thallus fanshaped, palmated, or digitate; fibres in delicate network, pale brown changing to yellowish or reddish brown, coarser and stiffer than common sponge.

c. *Thallus sessile, simple or lobed, often erect.*

6. *Spongia limbata.* *Lobed sponge.*
Fibres formed into circular porēs resembling lacc.

Spongia limbata, Montague Wern. Tr. 2, 111.

Sea-shore.

Thallus whitish, firm, elastic, pores very large, circular, fibres smooth.

7. *Spongia fruticosa.* *Shrublike sponge.*

Thallus tough, elastic, in network; fibres smooth, slightly connected, distant.

Spongia lichenoides, Pallas Zooph. 378.

Spongia fruticosa, Montague Wern. Tr. 2, 112.

Sea-shore.

Thallus 6 or 7 inches long, and half as wide, irregular, very light, elegant; fibres distant; network very irregular.

8. *Spongia fragilis.* *Brittle sponge.*

Thallus brittle, friable, in coarse network; fibres wrinkled as if covered with minute sand.

Spongia friabilis, Montague Wern. Tr. 2, 114.

Sea-shores.

Thallus brown, breaking between the fingers and soon rubbing into a powder like sand with a micaceous lustre.

9. *Spongia parasitica.* *Parasitic sponge.*

Thallus coarse; form indefinite, determined by the body upon which it creeps; fibres imbricated.

Spongia parasitica, Montague Wern. Tr. 2, 114.

On sertulariæ.

10. *Spongia fava.* *Honeycomb sponge.*

Thallus irregular, rather hard, brittle, extremely porous.

Spongia fava, Montague Wern. Tr. 2, 115.

Sea-shore.

Thallus 3 inches long, 2 broad, and half an inch thick, resembling a piece of old worm-eaten cork.

Ph. cell. aph. 2. THALASSIOPHYTÆ. 57. Spong. 361

11. *Spongia plumosa*. *Feathery sponge.*
Thallus irregular, rather soft, tough when deprived of its jelly.

Spongia plumosa, *Montague Wern. Tr.* 2, 116.

Sea-shores.

Thallus 3 inches high, 2 inches broad, paler than common sponge, not so compressible or elastic, resembles compressed tow.

d. *Thallus sessile, simple, irregular, creeping on other bodies.*

12. *Spongia coriacea*. *Leathery sponge.*

Thallus indefinite, wrinkled, cavernous.

Spongia coriacea, *Montague Wern. Tr.* 2, 116.

Thallus 4 inches long, 2 broad, not unlike a piece of burnt leather.

13. *Spongia tomentosa*. *Clothlike sponge.*

Thallus irregular, soft, brittle, full of pores, interwoven with minute spines.

Alyonium ramosum molle, medullæ panis intus simile, *Rait Syn.* 31, 1.

Spongia tomentosa, *Lin. Syst. Nat.* 1, 1290.

Spongia urens, *Ellis Zooph.* 187.

Spongia pánica, *Pallas Zooph.* 308.

Sponge like crumb of bread, *Ellis Corall.* 80.

Sea-shores and adhering to fuci.

Thallus orange-colour, soft; when dry white, extremely light, and brittle; when broken resembles crumb of bread, and causes a stinging pain like cowage.

14. *Spongia suberosa*. *Corky sponge.*

Thallus crustaceous, compact, tough, without visible pores externally.

Spongia suberosa, *Montague Wern. Tr.* 2, 100.

On old univalve shells, covering them and filling up the aperture.

Thallus indefinite, orange-brown turning brown when dry.

XXXIII. 58. TETHYA. Lamarck. *Tethya.*

Thallus tubercular, orbicular, inside fibrous; *filres* in bundles, stiff, asbestine, radiating from the centre to the circumference, scarcely gelatinous.

59. *Tethya*. 2. **THALASSEORHYZÆ**. *Pl. coll. apth*

1. *Tethya verrucosa*.

Warted tethya.

Thallus globose, externally warted, internally fibrous; fibrous in bundles, stiff, asbestine, radiating.

Alcyonium Lyncurium, *Lin. Syst. Nat.* 1, 1905?

Alcyonium Aurantium, *Pallas Zooph.* 357?

Spongia verrucosa, *Montagu Wern. Tr.* 2, 117.

Tethya Lyncurium, *Lamarck Hist.* 2, 396?

Sea-shore.

Thallus more than an inch in diameter, yellowish, slightly compressed, uncoated at bottom where it adheres to the rock, by which the asbestine spiculæ are shown.

2. *Tethya pilosa*.

Hairy tethya.

Thallus globose, fleshy, covered with short, thick-set hair, internally fibrous; fibres in bundles; stiff, asbestine, radiating.

Tethya pulvinata, *Lamarck Hist.* 2, 396.

Spongia pilosa, *Montagu Wern. Tr.* 2, 119.

Sea-shore.

Thallus not quite an inch diameter.

3. *Tethya* ? *penicilliformis*.

Pencil-like tethya.

Thallus yellowish, spreading horizontally; surface tubebearing; tubes upright, white, flexible, fibrous; fibres entangled.

Spongia Penicillus, *Montagu Wern. Tr.* 2, 95.

Sea-shore.

Perhaps only a species of *tethya* enwrapping a tubular sponge.

L. FLORIDÆ. *Thallus* contiguous, leatherlike or membranaceous, formed of interwoven longitudinal fibres, rose-red, sometimes growing white in the air; *sporidia* either immersed in the substance of the thallus, or in capsular or tubercular thecæ, rarely intermixed with jointed fibres.

XXXIV. 59. **DELESSERIA**. Lamouroux. *Delessier.*

Thallus flat, membranaceous, regularly veined; *sporidia* immersed, scattered in the marginal processes of the ribs and in roundish spots in the thallus.

1. *Delesseria sanguinea*.

Blood-red delessier.

Thallus round at bottom, branched; lobes distinct, oblong ovate, simple, not in the least cut.