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Further information at http://www.bryozoa.net/iba/index.html

PRESIDENT'S PAGE

Dear friends, bryozoan-lovers,
I hope all of you is safe and doing well, at least the best we can in these difficult times with Covid-19 dramatically changing our lives and the way to stay together and interacting.
As a consequence, and unlike for the Austral-Larwood meeting, for the first time since its establishment the Larwood meeting cannot be held "in presence" and we all will miss the opportunity to join all together to hug each other and directly share our feelings and enjoy to look for living and fossil bryozoans, to eat and drink…
Fortunately, modern technologies will allow us to communicate our latest research and findings though at distance! And Chiara is working hard for predispose this formerly unusual, hopefully quite occasional way to meet for IBA members. I am sure that inventiveness, mostly from young members, will ensure a successful meeting even during "social distancing" times!
And we'll have to make this enough for this year, waiting for better circumstances in the very next future.
Best wishes
Antonietta

COUNCIL ACTIVITIES

Council have been busy on your behalf in the last few months, on matters raised by members. The first was a submission to the New Zealand Government in early July supporting a proposed marine reserve in southern New Zealand. The letter accompanying the submission is attached to this newsletter email, and many thanks to Peter Batson and others for drafting this.

The second was made to Clarivate Analytics calling for reconsideration of the removal of the journal Zootaxa from impact factor lists. Thanks to Emanuela Di Martino and Bjorn Berning for drafting of the initial letter, and to other members who also raised this issue. The IBA was one of many raising this issue, and thankfully Clarivate retracted their decision in late July!

FROM THE SECRETARY

The following people are, or have been, members of the IBA, however I frequently receive email non-delivery notifications, and as far as I know they have not been receiving IBA emails or news for some time. This is a last attempt to reconnect with them before I remove them from the email list. If you know these people and can suggest an alternate contact please let me know. Thanks to those who have already responded to my direct emails asking for contacts.
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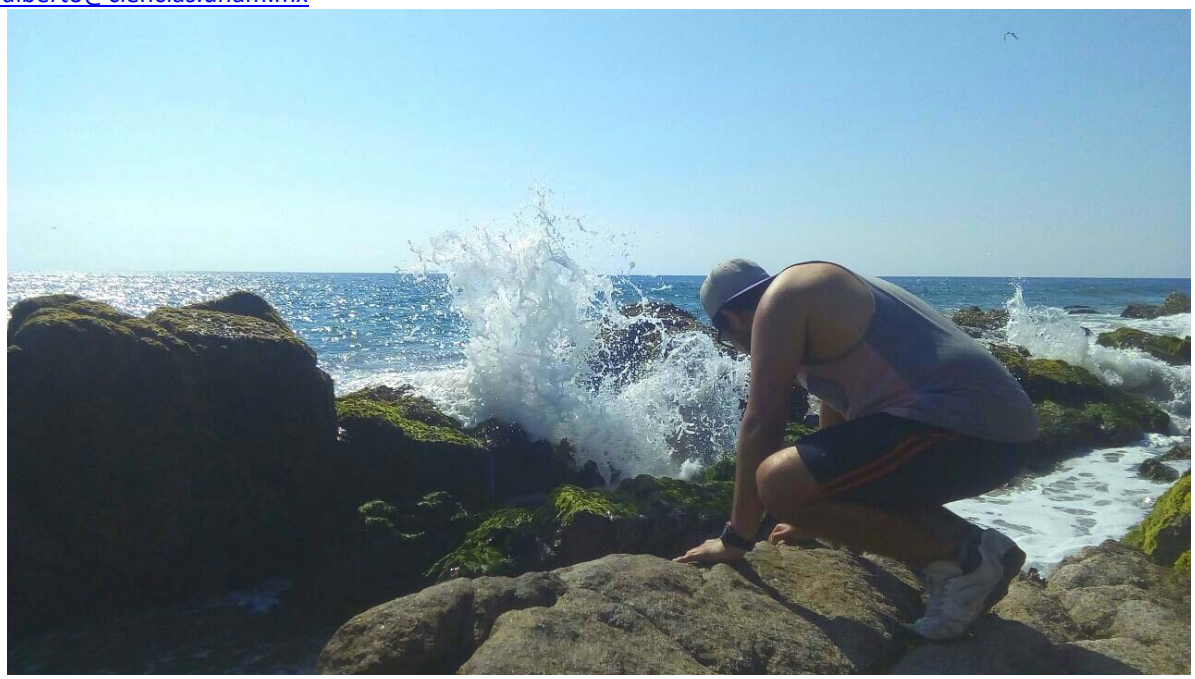
NEW MEMEBRS

Bernabé Moreno: I'm a Peruvian marine biologist, scientific/technical diver & underwater cameraman currently working with Antarctic & Southeastern Pacific macrobenthic communities. I'm focused on benthic ecology (biodiversity and physical drivers defining it) particularly in ecosystems highly vulnerable to climate change (e.g. polar benthos, high altitude lakes). My research is also focused on blue carbon ecosystems where I'm particularly interested in sessile suspension feeders, mainly the bryozoans. Bryozoology is a recent, but evolving interest I've developed ever since I got involved in the ASCCC project (Antarctic Seabed Carbon Capture Change). I'm very curious about the relationships between growth, mineralogy and carbon capture by cheilostome bryozoans, especially in a changing climate. Methodologically, I'm interested in the utilisation of underwater imagery and techniques to gather valuable information in subtidal ecosystems by means of the least invasive approach. My main affiliation is Científica del Sur University (Lima, Peru) where I currently work as an associate researcher. However, I'm concluding my postgraduate studies at Heriot-Watt University (Edinburgh).
https://www.researchgate.net/profile/Bernabe_Moreno

Félix Alberto Bello Victorino: Hello! My name is Felix, I am 24 years old and I am a biologist at the National Autonomous University of Mexico. About 5 years ago I started working with the taxonomy of Cheilostsmata bryozoans that live on sea urchins on the continental slope of the Gulf of Mexico.
I have participated in classes on the bryozoans taught by Dr. Judith Winston and Dr. Leandro Vieira with the biologist Armando Sosa. These classes have stimulated a personal interest and passion for these organisms that I hope to continue studying and understanding. My main objective is to learn more about the phylum and contribute to the study of taxonomy and ecology in my country. Actually, I am interested in starting a Master's program and working with the Bryozoans in the zone of minimum oxygen in the sea urchins of the Gulf of California. I am extremely proud to be a part of the IBA and look forward to continuing to learn about this incredible group.
Felix-alberto@ciencias.unam.mx



HANS DE BLAUWE TO RECEIVE HH BLOOMER AWARD FROM THE LINNEAN SOCIETY

I just wanted to let you know that Hans de Blauwe has been awarded the Linnean Society's H H Bloomer Award (https://www.linnean.org/the-society/medals-awards-prizes-grants/the-h-h-bloomer-award). The ceremony has been postponed until December, so photos of the event will follow.

Hans de Blauwe, a fireman by profession, has been making extraordinary contributions to bryozoology over the last 20 years. His achievements and services to the community have now being recognised by having been awarded the prestigious Linnean Society H H Bloomer Award. Hans is a highly productive naturalist with a particular interest in colonial marine invertebrates (bryozoans, hydrozoans, ascidians). He has authored 97 papers that include the description of 17 new bryozoan species and 3 new bryozoan genera, numerous reports of non-native/invasive species, and new species records for Europe. Furthermore, he has published a fabulous identification guide for the bryozoans from the Southern Bight of the North Sea (Mosdiertjes van de Zuidelijke bocht van de Noordzee: Determinatiewerk voor België en Nederland), which acts as a modern and comprehensive update of the work by A.W. Lacourt Bryozoa of the Netherlands (1951; Archives Néerlandaises de Zoologie) and provides a reliable reference for professional bryozoologists and keen amateur naturalists studying northern European bryozoans, alike.

As there are currently no employed bryozoologists in any of the Benelux countries, Hans is performing an important role in recording and describing the fauna of the southern North Sea. His particular interest in identifying and reporting non-native and invasive species, has been generating continuous data since 2006 through his contributions to the check list of Non-native species in Belgian waters of the North Sea and the surrounding estuaries (= Niet-inheemse soorten in het Belgisch deel van de Noordzee en omliggende estuaria). In line with this, Hans' publications have also been raising awareness of plastic substrates as rafting material facilitating long-range dispersal of encrusting epiphytes.

It should also be noted, that his interest in natural history is not limited to colonial marine animals. He has also published on Crustacea, Mollusca, Insecta, Dinoflagellata, Ctenophora, Nemertea and Platyhelminthes, and has produced an inventory report of molluscs for the coastal waters of Belgium.
Many congratulations for this much deserved award from all of us at the IBA!

All the best,
Andrea Waeschenbach

ARTICLES

THE STORY OF *SCEPTROPORA*, A SPECIAL BRYOZOAN

Jaap Eyzenga
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It is 1888, the paleontologist Edward Ulrich is searching for fossil bryozoans in North America. Four and a half metres below the base of the Silurian in the Avalanche Lake region of the Mackenzie Mountains he discovers a layer full of various small fossils in the Richmondian of the Late Ordovician Whittaker Formation. In one chunk he sees small bryozoans that have the shape of a scepter. He will later incorporate this form into the name: *Sceptropora*.

It is March 2001, I am in sand quarry De Haerst, near Zwolle in the Netherlands, looking for Ordovician brick lime. I pick up a piece with very small bryozoans. At home I discover that this is *Sceptropora*. I had recently bought parts of the series "Fossilien von Sylt" by Ulrich von Hacht, in which they are mentioned in an article by R. Schallreuter and G. Hillmer (1987) and recognized them immediately. It was a special experience for me to now also find the bryozoan that Ulrich had discovered in North America over a century earlier, in De Haerst, Netherlands.

Origin

At De Haerst, sand and gravel are extracted from a sand pit for, among other things, the construction of roads. The Appelscha formation, which consists of material deposited in the delta of the Eridanos, occurs here at a depth between 18 and 30 metres (Uum 2003). This river system originated 40 million years ago. Twelve million years ago, the Eridanos reached the North Sea basin and built a huge delta with its sediments. The 3000 km long primeval river flowed through what are now called the Gulf of Finland, Gulf of Bothnia and Baltic Sea. These are in fact parts of the ancient bed of the huge river that is the main supplier of Dutch/German Ordovician boulders of Baltic origin. Packed in ice floes, they came our way. Some were transported as rolling boulders by the river water (Fig. 1a). This is clearly visible in the shape of the boulders.

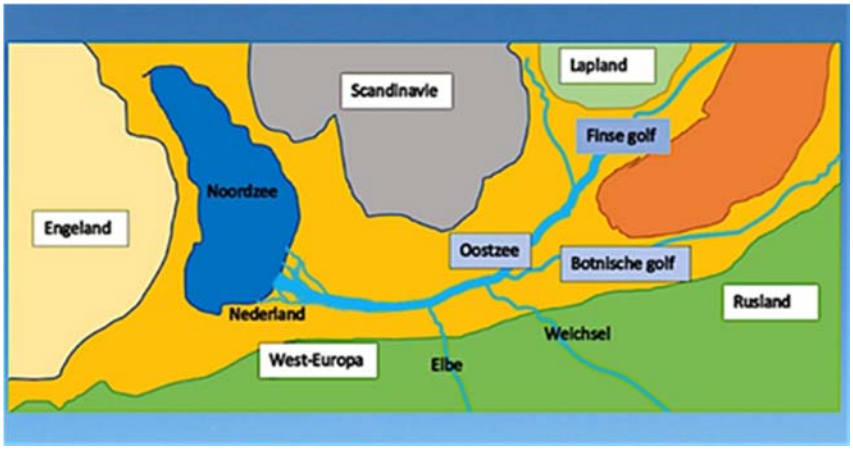

Fig.1a (left). *Free reconstruction of the course of Eridanos. Probable origin North-Finland. Made with his large delta, which flows into what is now called the North Sea. Transported huge amounts of sediments into the northern part of the Netherlands (Appelscha formation).* ***Fig. 1b (right)*** *Geographical map of the area called WWW-area.(grey) Borderline Netherlands / Germany.*

Brick limestone, Lavender-blue Haljala- and Keila-hornstone (DI–DII), Pirgu brown hornstone and Öjlemyr flint can all be found in the WWW area (Fig. 1b) and at De Haerst. I would like to refer here to the article by Van Keulen & Rhebergen (2017), which describes the distinction between the various types of Ordovician limestones with their own typical fauna. *Sceptropora*, for example, does not occur in the brick lime of Haljala age. They can be found in the brown

Pirgu horn stone and in the Öjlemyrflint. The American Richmondian, in which Ulrich made his discovery of *Sceptropora*, covers the same period of the Pirgu / Porkuni (Fig. 2).

ouderdom	tijdvak				blauw: losse verkiezelingen	blauw: verkiezelde kalksteen	bruin/grijs: verkiezelde kalksteen	bruin/grijs: losse verkiezelingen
455 MA	Upper Sandbian	Viru	C3-D1 Haljala	C3 Idavere			Baksteenkalk	knikkeralgen *Coelosphaeridium sphaericum* *Cyclocrinites porosus*
				D1 Jõhvi	blauwe sponzen *Carpospongia castanea, pogrebovi, conwentzi* *Caryospongia globosa, ivalans, edita* *Sytrochos pyramidoidales* *Diotricheum vonhachti* *Cyclocrinites spasski* bryozoën *Dipitrypa petropolitana* cephalopoden	Blauwe Haljala-hoornsteen		
453 MA	Lower Katian		D2 Keila					
caesuur								
447 MA	Upper Katian	Harju	F1cγ Pirgu		blauwe sponzen *Caryospongia diadema* *Hindia sphaeroidales* tabulaten gelaagde algen stromatoporen bryozoën	Blauwe Pirgu-hoornsteen	Öjlemyr-flint/ kalksteen Wielener type	Bruine Pirgu-hoornsteen
445 MA	Hirnantian		F2a Porkuni					sponzen tabulaten stromatoporen

Fig. 2 *Stratigraphy of the silicified limestones of the WWW area. The presence of* Sceptropora *is limited to the Upper Ordovician Öjlemyrflint and Brown Pirgu hornstone. Schedule: P. van Keulen. Contrary to usual, the chronology in this scheme runs from above (old) down (young).*

Kingdom	Animalia
Phylum	Bryozoa
Class	Stenolaemata
Order	Cryptostomata
Suborder	Rhabdomesida
Superfamily	Nikiforovellina
Family	Hyphasmoporidae
Subfamily	Sceptroporinae
Genus	*Sceptropora*

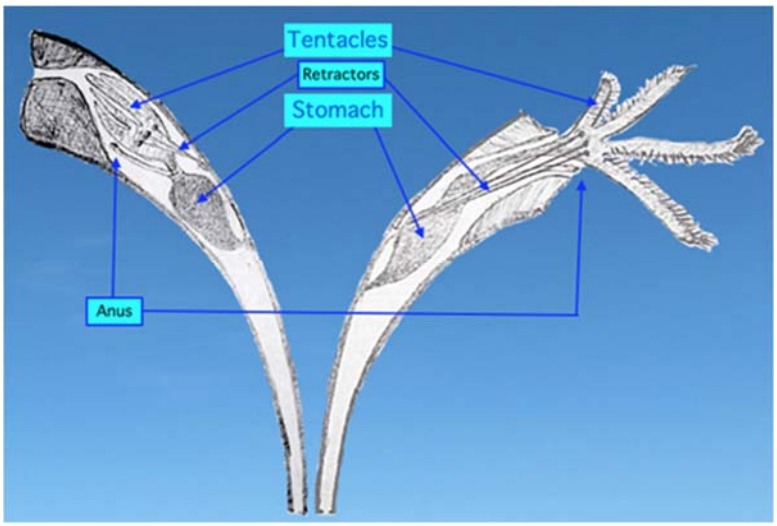

Fig. 3a (left) *Systematics of the genus* Sceptropora*. After Bassler (1911).* ***Fig.3b (right)*** *Simplified representation of the construction of a stenolaemate zooid in the curved shape of* Sceptropora*. On the left the retracted and on the right the open lophophoor / tentacles*

What are bryozoans?

The common name for bryozo is "moss animal". The Bryozoa (Fig. 3a) form their own phylum. They occur in deposits from the Lower Ordovician until recent. They are small colony-forming animals that form a lime skeleton. In every room there is one animal with tentacles. The colony, can be branch-shaped, fan-shaped or overcrusting. Colonies are usually quite small and consist of a large number of separate animals, which are also referred to as zooids. Each zooid, which is usually less than a millimeter long, is enclosed in a small box wich is oval, vase or tubular shaped. Bryozoans differ from corals in their construction. Corals do have tentacles but no organs and are, unlike bryozoans, reef builders. We regularly find beautifully preserved prints of bryozoans in the different types of silicified limestones from the WWW-area and De Haerst (Fig.1b).

***Sceptropora* Ulrich, 1888**

The genus *Sceptropora* belongs to the class of Stenolaemata. The basic principle of a zooid of this group consists of an elongated tube containing the retracted tentacles (lophophore). The mouth is in the middle of it. Below it are the stomach and other viscera, alongside is the intestinal canal, which opens outside the ring of tentacles (Fig. 3b). The whole body sits in a fleece with an attachment at the bottom of the housing and just below the edge, where the opening is. The body is pulled in by muscles (retractors) and pressed outwards by means of water pressure. The tentacles are coiled lengthwise and unfurl when going outwards. The tentacles have short hairs along the sides. With

this they sieve microscopic algae, animals and organic particles from the seawater. *Sceptropora* have autozooecia (largest, usually in round and tubular chambers in the colony), which only provide food and oxygen. Further research is needed to determine if gonozooecia (for reproduction) and kenozooecia (for skeletal reinforcement only, but without viscera) are also present.

Sceptropora consists of slender segments. These are grooved in the longitudinal direction all around and broaden strongly upwards. The apertures (zoeecia) are arranged in several straight lines. Segments are stacked upright, with a joint in a bowl, and possible branches in two. *Sceptropora* occurs with a number of species (Fig. 4), from the Middle Ordovician into the Silurian. In the following I will first discuss the species that I most often find in the Ordovician erratic material: *Sceptropora facula*, after that I will discuss the other species which can be found.

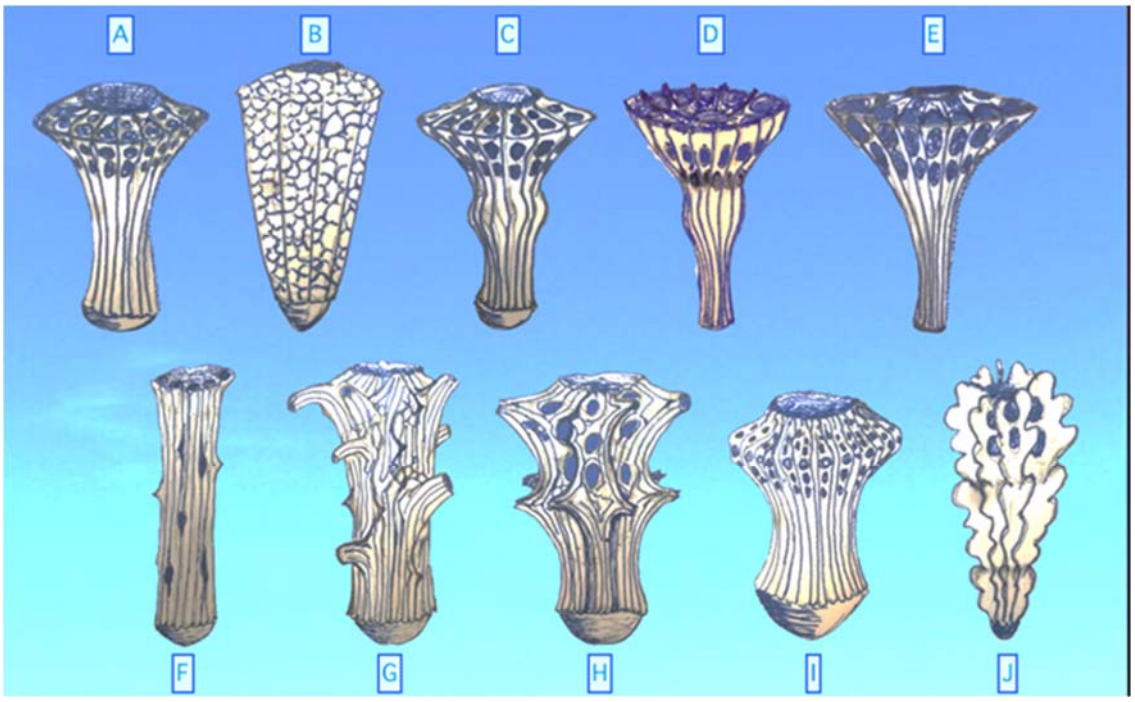

Fig. 4. *Shape variations within the different types of* Sceptropora*: A,* S. facula *(Ulrich), B,* S. francisca *(Bassler), C,* S. facula *bell shape sphere, D,* S. facula *bell shape hollow (Bolton & Ross); E,* S. facula *(Schallreuter), F,* S. spinosa *slender straight, G,* S. spinosa *wild form, H,* S. spinosa *(Kiepura) short and thick, I,* S. estoniensis *(Brood), J,* S. florida *(Kiepura)*.

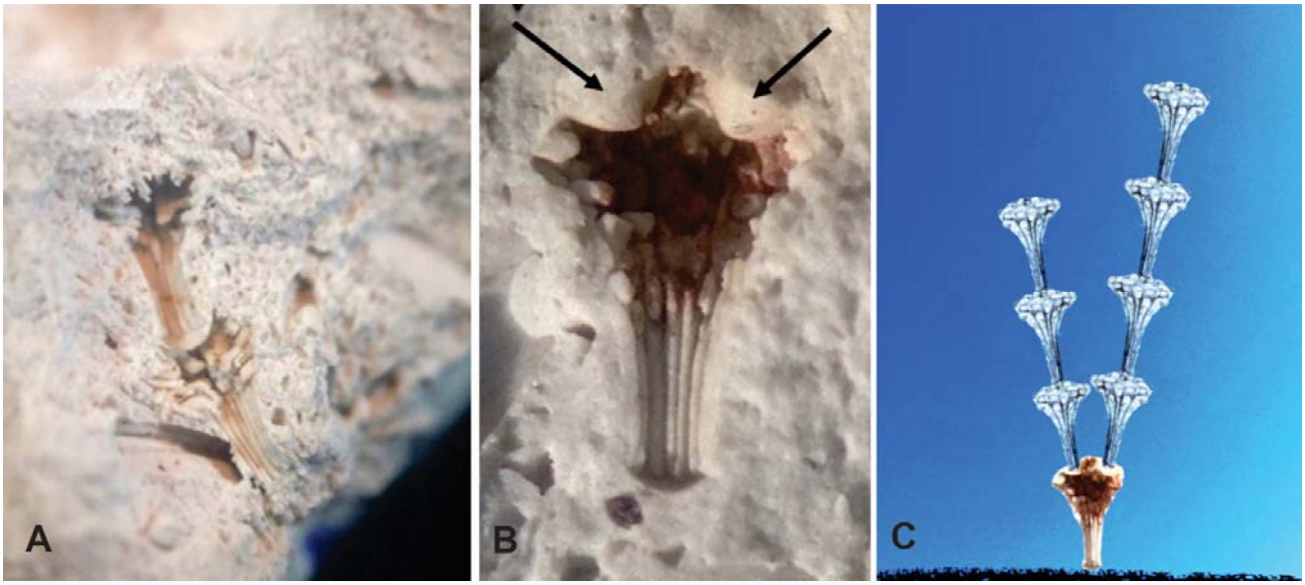

Fig.5a *Print of two stacked* S. facula *segments. Total height 3.4 mm. Here you see the thinner zooecia channels and multiple lines on the stem.* ***Fig. 5b.*** *Cross section of* Sceptropora *with two bowls (arrows). Height 1.3 mm. Öjlemyr flint.* ***Fig. 5c.*** *Reconstruction of growth habit of* Sceptropora facula*, with branching.*

***Sceptropora facula* Ulrich, 1888**

The designation facula (= torch) refers to the model. The zoarium consists of colonies 1 to 2 mm in length and 0.7 to 2 mm in diameter (Bassler, 1911; Schallreuter, 1987). Each colony has a number of zooecia. A shallow bowl is centrally located on the disc-shaped top of the colony. At the bottom of the slender tapered stem there is a slight bulge with a diameter of ± 0.25 mm. Each subsequent segment is placed with the bulge in the bowl of the previous one (Fig. 5a). Segments with two bowls also exist (Fig. 5b). So *Sceptropora* has the ability to branch (Fig. 5c). More than two bowls on one segment are not known. *Sceptropora* attached itself to a solid surface, such as a brachiopod or gastropod shell. The top can consist of ten triangular sections, each with three to five autozooecia, the largest diameter of which is 0.11 mm (Fig. 6). There are two scoop-shaped apertures on the outer edge of each section. Then, in the direction of the bowl, follow one and sometimes more apertures with a round to oval shape. Each opening turns into a triangular channel. The sections are separated from each other by upright ridges with a fine serration. The outer edge of the top forms a sharp separation. Under the rim there are two round autozooecia (0.09 mm in diameter) on top of each other in each section. In some cases there is a third. The stem divides, at 9 sections, into 18 hockey stick-shaped segments, separated by the upright ridges. The notched ridges start at the bottom of the stem and bend outward to the edge of the top. This creates the scepter/umbrella shape specific to *S. facula*. The zooecia channels follow the same line from the side to the bottom of the stem. The zooecia on the top of the zoarium are curved towards the central canal. This is clearly visible in the cross sections (Fig. 7a-c). The channels have no membranes.

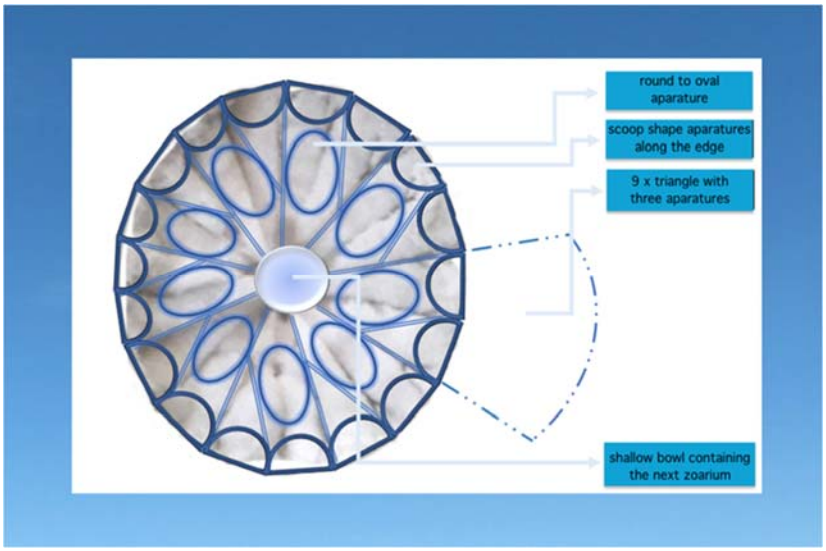

Fig. 6: *Detail drawing of* Sceptropora *facula. Note the scoop-shaped apertures along the rim, the triangle with three apertures and the location of the bowl.*

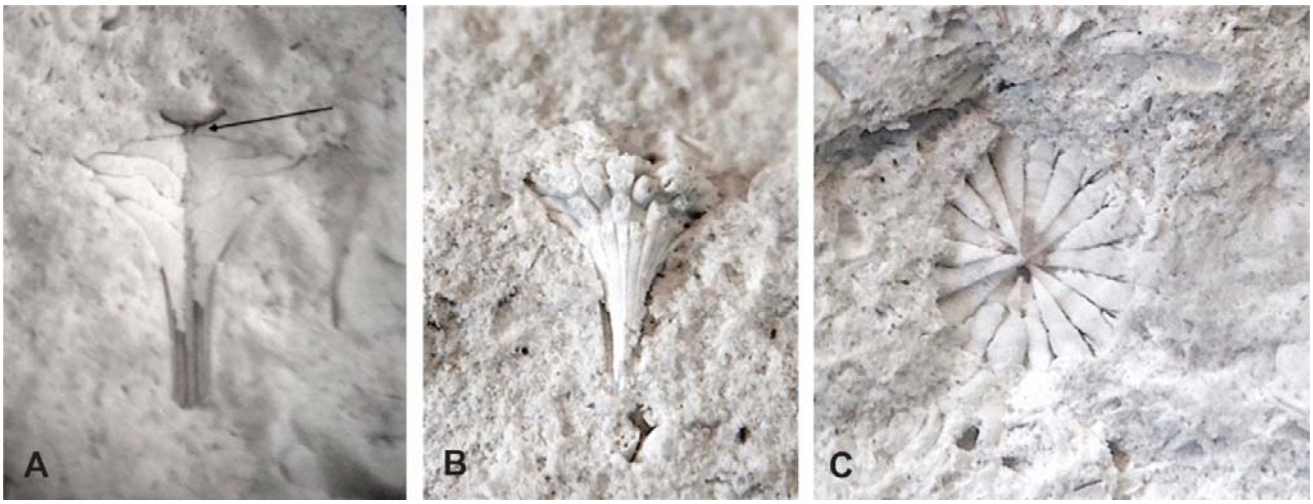

Fig. 7a: *Cross section of* Sceptropora *facula from Öjlemyrflint. Channels are filled with sediment. Height 1.5 mm. The central channel is visible at the bottom of the bowl (arrow). In addition to flexible connection and mutual contact also for distribution of food to the rest of the colony.* ***Fig. 7b:*** *Clearly visible course of the sediment-filled channels. Height 1.4 mm.* ***Fig. 7c:*** *Top view of internal channels curved towards the foot. These zooecia of* Sceptropora *facula are located under the rim of the top of the zoarium. Diameter 1.4 mm.*

Fig.8a: *Branch of bell-shaped* Sceptropora *in brown Pirgu horn stone, stacked seven segments. See inset magnifications. This robust type has a row of small round zooecia around the large bowl. Halfway up the stem, with thin lining, there is a bulge all around, which creates the bell shape. Total height of the branch is 12 mm.* ***Fig. 8b.*** *Two silicified segments of* Sceptropora facula *from weathered brown Pirgu horn stone. Segment height 1.4 mm. One stem is broken. From a row of nine segments. Photo: Percy van Keulen.* ***Fig. 8c:*** *Top three stacked specimens (height 4.3 mm) of* Sceptropora facula *from the row of nine. (Database No. N01H050).* ***Fig. 8d.*** *Print of a* Sceptropora estoniensis *with two bowls (arrows). Height 1.4 mm. In the magnification the single bowl.*

I found my first *Sceptropora* facula in 2001 in De Haerst in a hardground of so-called Brown Pirgu horn stone (Fig. 8a). In the flat stone, about 6 cm in diameter, there are 15 segments. Nine are lined up, some of which are still stacked with the joint in the bowl. The segments are all silicified (Fig. 7b, 8b-c). In Öjlemyrflint, you find only the print of the original (Fig. 5a).

After a long search I also found specimens with a double bowl. The first specimen I discovered in the chalky outer layer of a densely silicified Ordovician limestone (Fig. 8d). Special is that the two bowls are always located outside the center of the top. So it looks like that, during construction, the bryozoan has already taken the branching into account.

Other types and models of *Sceptropora* found at De Haerst

In addition to specimens with the normal umbrella shape of *S. facula*, I also come across specimens with a more robust construction, which have a thicker convex shape with a smooth surface in the bowl and at the base (Fig. 8d). The ridges, which are ribbed with this type, run up to the bulge. This type has been designated by Brood as a separate species, *Sceptropora estoniensis* (Brood 1980) (formerly *S. facula*, Ulrich). Schallreuter (1986), however, believed that there was too little evidence to speak of a new species. He regarded *S. estoniensis* as a nomen dubium (= doubtful). However, just like Kiepura (1962), I follow Brood's view here. *S. estoniensis* is 1-3 mm high and the diameter of the upper part is between 1 and 2 mm. The bowl is 0.7-1.0 mm in diameter and depth. The bottom diameter is 0.2-0.3 mm. The number of autozooecia is 5-10 in each line between the upright spiky ridges. The whimsical but smaller zooecia channels here run in a crescent shape directly to the centre (Fig. 9a). *S. estoniensis* is very similar to *S. facula*, but it is more robustly built and has smaller apertures (Fig. 8d).

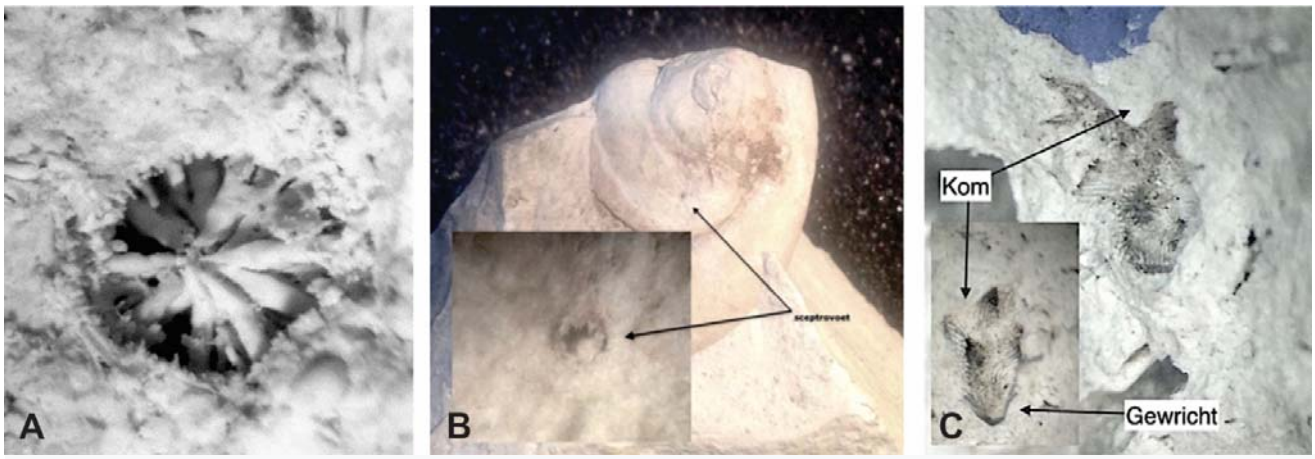

Fig. 9a: *Cross section trunk of a* Sceptropora estoniensis*. Diameter 0.6 mm. Clearly, the narrower zooecia channels, compared to* S. facula*, are visible, leading in this type to smaller apertures on the outside.* ***Fig. 9b****: Gastropod with base of* Sceptropora*. In the magnification, footprint is visible.* ***Fig. 9c.*** *Imprint of the irregular shape of* Sceptropora spinosa*. Magnification inset. Height 1.9 mm.*

In a third type that I found in silicified limestone, the shape is slightly more upright towards the top (Fig. 4a). With this type you do not see scoop-shaped, but round zooecia along the edge. I recognized a fourth type of *Sceptropora* as *S. spinosa*. I can now count several prints of this kind to my collection. *S. spinosa* is also robustly built and has irregularly protruding points on the stem (Fig. 9c). It has not the umbrella shape. The height of a segment is 2.25 mm, the maximum diameter is 1.33 mm. Some ribbed raised edges meander above the mid-section across the stem, others follow a more straight line. The bowl on top and the joint at the bottom are very stocky (Fig. 4g, h). The American specimens of the species mentioned are generally slightly larger than those from Baltica. Kiepura (1962) compared the formats in a chart.

When inspecting the now hundreds of *Sceptropora* in my collection, I noticed that there is a fifth type with a real umbrella shape (Fig. 4e and 8b) and an almost flat bowl on a slightly convex zoarium and an almost flat joint (Fig. 6 & 7a). Of this *Sceptropora*, which differs from the normal *S. facula* in its refined appearance, I have not yet found any with a double bowl. Could it be that this type of *Sceptropora* did not branch and therefore belongs to a species other than S. facula from Ulrich? Schallreuter & Hillmer found the same type in boulders Öjlemyr flint from the isle of Sylt and described them in an article (1986) which can be found in part 2 of Ulrich von Hacht books Fossilien von Sylt on page 233-239. An important difference is that the zooecia canals fill the complete stem, while the Ulrich type has a much slender internal canal in the centre.

Finally, there are specimens that also come with a double bowl (Fig. 5b & 8a) but have a straighter shape than the regular *S. facula*, and the cup is deeper in combination with a spherical joint. With this, sixth, type you often see a slight bulge in the middle of the stem, giving the impression of a bell shape (Fig. 4c, d). Furthermore, the teeth are less sharp, as you see with *S. florida* (Fig. 4j), a species from Porkuni and described by Kiepura (1962). It is also uncertain whether this bell-shaped *Sceptropora* can be counted as *S. facula*. Further research is needed to determine whether these types are older or younger models from the holotype.

It is a pity that the first researchers of *Sceptropora* are no longer with us, because I would like to discuss the difficult questions of the identity of the latter types five and six with them.

Other species

In addition to the species *Sceptropora facula*, *S. estoniensis* and *S. spinosa*, it is not inconceivable that *S. florida* will also be recognized in the erratic boulders of the Haerst and the WWW-area (Fig. 1b). Kiepura has found this species together with *S. spinosa* in boulders with a Porkuni fauna from the Gdansk and Warsaw area. *S. florida* has a flower-like shape. The ridges, which run from top to bottom, are high and undulating. A segment is 1-1.3 mm high and has a diameter that increases from 0.2 to 0.7 mm from top to bottom. The base, 1 mm in diameter, is smooth (Fig. 4j).

Several other species occur, which are not to be expected in our silicified Pirgu limestones, because they originate from periods other than Pirgu: *S. francisca* Bassler, 1911, named after Francisca Wieser, who made many drawings for R. Bassler for his well-known monograph on Baltic bryozoans (Bassler, 1911), from the Middle Ordovician of Estonia (Oandu stage, D3) (Fig. 4b). *Sceptropora alta* Gorjunova, 1985, also from the Oandu stage of Estonia; *S. accepta* Gorjunova, 1985 and *S. humillis* Gorjunova, 1985, both from the Upper Silurian of Estonia; *S. orientalis* Premik, 1924, from the Silurian of Podolia, Ukraine; *S. fustiformis* Ulrich, 1889, from the Silurian of Ontario.

Living environment, migration and occurrence

A bryozoan, not excluding *Sceptropora*, needs a firm foundation to attach itself to. I discovered the foot of a *Sceptropora* on a gastropod Fig. 10). The top of the zoarium can still be seen in the other piece of the boulder. Given the construction of the Bryozoa, the environment in which *Sceptropora* lived must have been calm and clear water without strong waves and currents. During the Pirgu, the sea in many parts of the Baltic basin was shallow with reef formation along the coast (Kröger et al., 2016). Most ostracodes from the silicified limestone from this period are smooth, which also indicates such a biotope. Nickles and Bassler (1900) wrote about the great inland sea in the Palaeozoic of North America, which offered ideal conditions for the origin and life of many species of small and delicate bryozoans. In the American sites you will find an Ordovician fauna that is very similar to that of the Baltic boulders. In the Upper Ordovician, the paleo continents Laurentia (of which present-day North America was a part) and Baltica were relatively close together, separated by a narrow spur of the Iapetus Ocean. Palaeontologists assume that many species migrated from Baltica to Laurentia, the American palaeo continent. This phenomenon is also known as the Baltic invasion. Movements of 100 km per generation are considered possible. Responsible for the migration are tropical storms and the currents of the Iapetus Ocean, according to research by Lam & Stigall (2014). Corals, crinoids and ostracods do not need a nearby coastline for migration, such as trilobites. According to studies by Kiepura, 65 of the 161 American species studied are also found in Baltica (Kiepura, 1962). Kiepura based her study on Estonian material from the town of Porkuni and American material from the Mackenzie Mountains.

My discovery of *Sceptropora* in De Haerst's Öjlemyrflint has led collectors to recognize the bryozoans in the WWW's Öjlemyrflint. The bryozoans, at least *S. facula*, are by no means rare in this type of limestone. The fauna and flora of the Öjlemyrflint form a huge study area. I just mention a few species with which *Sceptropora* can be found together: the bryozons *Corynotrypa bassleri* (Kiepura, 1962); the rugose coral *Streptelasma*; the ostracods *Platybolbina* and *Tetradella*. Trilobites are represented by *Erratencrinurus kiaeri* and *Harpidella* sp. Scaling plates or sclerites of the machaeridia *Lepidocoleus* and *Turrelipas* can also be found. Rare jaw parts of scolecodonts and conodonts (eg *Ozarkodina*).

Acknowledgements

In particular, I am indebted to Freek Rhebergen (†2018) who encouraged me to write something about this subject and conveyed to me what he knew about it. I thank Percy van Keulen for his stimulation and corrections and Dr. Andrei Ernst for the translation of the Russian article by Gorjunova about some specific types of *Sceptropora*. NB Unless otherwise indicated, the photos are taken from the author's file. Drawings and images by the author

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MEETING ANNOUNCEMENTS

LARWOOD 2020

Proposed week of the meeting: 1st week of October (exact dates will be communicated at the end of August)
Meeting duration: 1 day or two half days
Deadline for abstract submission: **31st August 2020**
Please, send the abstract and any enquiries to Chiara Lombardi (chiara.lombardi@enea.it).
The abstract template is in attachment. Please specify the type of contribution you want to show.

We propose three types of possible contribution:
Regular Talk: 10 minutes talks based on slides;
Speed talks: 3' minutes talk based on slides or other communication tools (movies, live performances…);
Digital Objects: 3-5' demonstrations by using technology-based tools.
Platform: Zoom- Pro

Speed talk and Digital objects will replace the usual poster session.

Up to now we received 16 contributions, and further contributes are really encouraged.

By the 15th of September we will send the dates and schedule with times for allowing different countries to be connected. For those one who want to just to attend the meeting as audience, please email Chiara Lombardi chiara.lombardi@enea.it , so she can register your email addresses and send the link to the room and/or provide some advices before the meeting.

We have a limited number of participants to host (100) so the link will be sent to audience members only shortly before the meeting to ensure all contributors are accommodated first to avoid the unpleasant situation of having speakers excluded because the meeting is 'sold out' with the audience only!
Meeting schedule to be released shortly!

We have a small team of bryo-friends working on this Larwood WebMeeting but anyone who wants to join us and contribute is more than welcome.

Best wishes
Chiara

Thank you!

Chiara
chiara.lombardi@enea.it

AUSTRALARWOOD 10

Adventures in Southern Hemisphere Bryozoology

Our somewhat-annual southern bryozoology meeting reaches its 10th birthday!
In which we talk, eat, laugh and chatter with each other about bryozoans, science, and life, while we visit, collect, examine, and discuss local bryozoans, beer & wine, and scenery.

In Early 2021

Timing will be chosen to suit visiting bryzoologists (if they can come) in the austral summer between January and March 2021.
We will enable zoom participation in the talks section, at the very least.

At Otago University, New Zealand

Where bryozoans abound! Living bryozoans of all shapes and sizes thrive on the Otago shelf; long-dead bryozoans dominate our Tertiary North Otago limestones. We'll be centred on the City of Dunedin, a small likeable city on South Island, New Zealand.

Draft Programme

Day	Daytime activity	Evening activity
Monday	folks arrive in Dunedin, settle in. *RV Polaris II* dredges for bryozoans (places available) on Otago Shelf	Welcoming wine-tasting
Tuesday	a day at Portobello Marine Lab, where we will give and listen to talks and also take a few hours to examine living bryozoans dredged the day before	Conference dinner
Wednesday	road trip to key North Otago bryozoan fossil localities. Those needing to go to Christchurch continue on, others come back to Dunedin	Brewery visit
Thursday	visitors fly out, unless they are staying for a while	

Stay a while

We would love for researchers to add value to their trip to New Zealand by staying a little longer – we have plenty of material to examine, and a fully-equipped marine research lab. Let us know what you would like!

Be in touch

Please email to register your interest and let us know your preferences/dates/constraints.

abby.smith@otago.ac.nz

IN MEMORIUM

ADRIAN JOHN BANCROFT
(1958–2020): an appreciation

Adrian Bancroft was a palaeobryozoologist whose research focussed on the Lower Carboniferous (Mississippian) faunas of Britain and Ireland. Following a short illness he died on Sunday 5 July 2020 at his home in North Wales. Adrian will be remembered with great affection by friends and colleagues alike, and especially by IBA colleagues who knew him from his participation in the conferences of 1983 held in Vienna and 1986 in Bellingham. Adrian was great company, generous with his time and expertise, and he was perpetually happy especially when engaged in fieldwork. He will be sadly missed.

Born on 7 May 1958 in Chesterfield, Derbyshire, he grew up in North Wales where his family had moved when he was only a few years old. He soon became familiar with the wonderful geology of the district and from an early age began to collect fossils. While in later life he also assembled fossils from other parts of the country, these locations and successions in North Wales remained his favourite fossil haunts to which he would continually be drawn. It was along this coastline that he collected his first fossil in Carboniferous limestone, and it is where Adrian requested that his ashes be scattered.

Adrian was educated at Wrexham Grove Park and then Ysgol Ruabon, and he went on to attend Keele University graduating with a 1st Class joint honours degree in Geology and Geography. No doubt influenced by his early interest in fossils he embarked on research for a PhD study on Carboniferous bryozoans at the University of Durham, where he was supervised by Gilbert Larwood. While at Durham he was well-known for his prowess at crosswords and he was University darts champion for three successive years. A member of Hatfield College (one of the constituent colleges of the university), he met his future wife Elenid there in the student bar when she was working there as a student during the summer; they married in Hatfield College Chapel in 1991.

Adrian received his doctorate in 1984 and soon afterwards moved to Dublin. Between then and 1988 he was based at Trinity College as a Government of Ireland Post-Doctoral Fellow. This period as a Post-Doc not only allowed him to publish papers from his PhD research but to develop further studies based on collecting at Irish and British localities.After one collecting trip in the UK he was returning to Dublin with his specimens carefully packed in carry cases when he was stopped by Customs Officials and asked to explain why he was carrying rifle cases! On inspection

Adrian was able to explain the significance of his material and he was allowed to leave the arrivals hall with his collection intact.

He was a careful and thorough taxonomist whose work redefined to modern standards taxa including species of *Eridopora*, *Septopora*, *Hemitrypa*, and *Ptylopora*. Based on material from the Midland Valley of Scotland he erected a new species of *Penniretepora* and the genus *Polyfenestella*; the latter is characterised on possessing two distinctive heterozooecia. Of particular value are his comprehensive assessments of enigmatic Palaeocoryne-structures, secondary nanozooecia, and ovicells in fenestrate taxa, studies which reached a wide audience having been published in *Palaeontology*. He worked up and elucidated the bryozoan zonation present in the reefal structure at Nant-y-Gamar in North Wales (1988 and 1991), and produced a useful biostratigraphic synopsis of British Carboniferous bryozoans in 1987. Later he collaborated with Patrick Wyse Jackson on various papers on the cryptostome *Rhabdomeson* and cystoporate *Fistulipora*, and with him and Ken McKinney produced a comprehensive reevaluation of fenestrate taxa originally described from south-east Ireland over a century and a half earlier. He deviated only once from publishing on groups other than bryozoans when he produced an assessment of type ammonites from Northern Ireland with Colin Reid (1986), although he also questioned the affinity of *Hederella* which is now known not considered to be a bryozoan. His last contribution was as a co-author on a paper on Palaeocoryne-structures in fenestrates from Mexico, published in the 2019 IBA conference volume.

Adrian's fieldwork and published research showed him to be an astute collector, diligent curator, excellent draftsman, and scientific thinker and recorder whose legacy is to be found in his own published output as well as in the pages of more recent compilations on the palaeobiology of bryozoans by others who drew on his findings. No doubt his work will continue to be cited in the future as it provides a benchmark for the current understanding of British Carboniferous bryozoology. His memory is also recalled in the cystoporate species *Meekoporella bancrofti* described by three colleagues in 1999 from the Mississippian of Somerset in England.

Following his fellowship in Dublin he worked in finance, but retained a deep love of collecting and had plans to reinvigorate his bryozoan research. He recollected in the Ordovician of North Wales, the Silurian of the Welsh borderlands and had also assembled a suite of beautiful specimens from the Mississippian of Durham. It is planned that these specimens will be deposited in a number of museums so that they will be available for study, and a number of collaborative projects that he had commenced will be completed.

As was said at his funeral by Roger Kimber, his close friend from university, Adrian loved fishing, fossils and food. While in Dublin he shared a house with close friends who affectionately called themselves 'The Grovers', but they also had to share the fridge with his fishing bait. Following his untimely death friends recalled long evenings spent with him over good food and wine, and universally they remembered him with enormous fondness—Adrian was a lovely man and a great friend.

He is survived by Elenid, his brother Neil, nieces and nephews, and a very wide circle of friends.

Image courtesy of Elenid Bancroft.

Patrick Wyse Jackson

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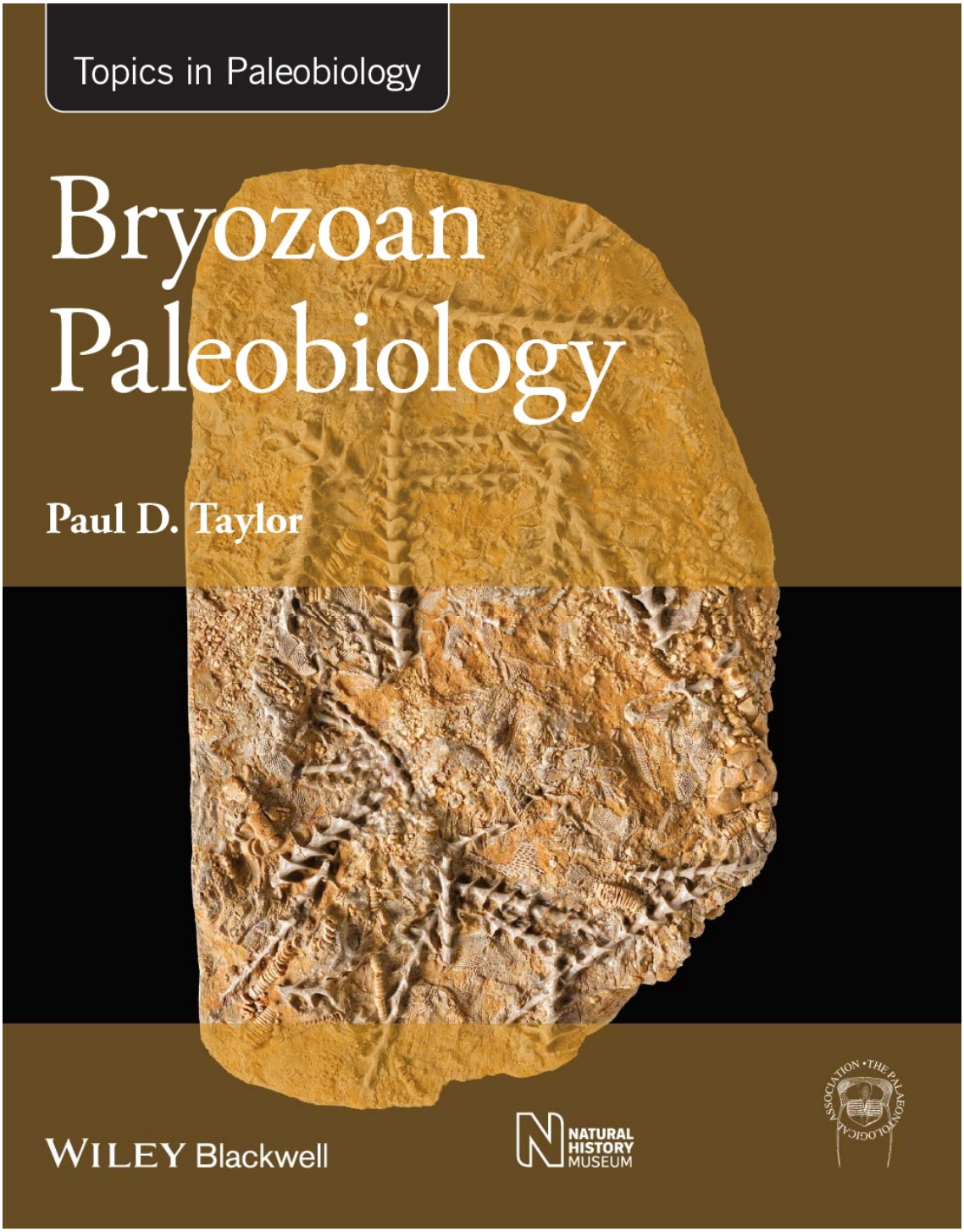
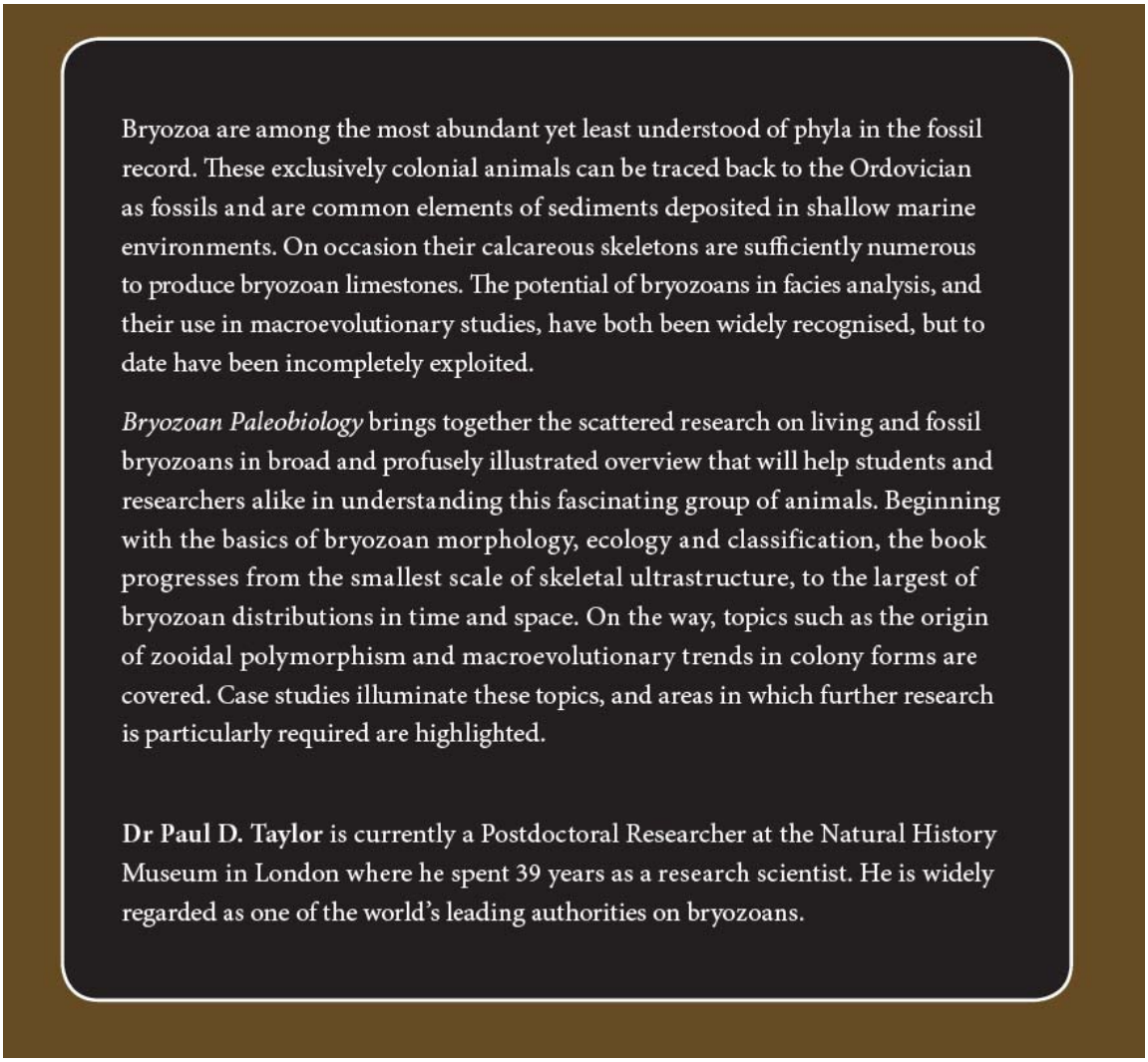
BRYOZOAN PALEOBIOLOGY

Paul Taylor

My book Bryozoan Paleobiology will be published soon: according to the Amazon UK, website, the paperback edition will be issued on 13 August 2020, followed by the hardcover version on 3 September 2020. It runs to 320 pages and includes 12 coloured plates and 145 figures in the text (a mixture of line drawings and halftones). There are 10 chapters: Introduction, Biomineralization and Geochemistry, Zooid Morphology and Function, Colony Morphology and Function, Biotic Interactions, Ecology and Palaeoecology, Biogeography, Phylogeny, Evolution and Fossil History, and Prospective Future Research. While the book is aimed principally at palaeontologists, it draws heavily from the neontological literature and should also be of interest to those focused on modern bryozoans.





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(Eds note - please check availability and delivery time to your country – some suppliers and locations have restricted delivery due to COVID-19)
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https://www.amazon.com/Bryozoan-Paleobiology-TOPA-Topics/dp/1118455002

https://www.bookdepository.com/Bryozoan-Paleobiology-Paul-D-Taylor/9781118455005?ref=grid-view&qid=1597538841914&sr=1-1

ANNALS OF BRYOZOOLOGY 7: CALL FOR PAPERS.

Annals of Bryozoology was first published in 2002 and to date six volumes have appeared. Volume 7 is in preparation and two contributions have been submitted. The editors, Patrick Wyse Jackson and Mary Spencer Jones, would be most interested to receive offers of further papers that could be included in this volume. It is anticipated that papers will be published online as soon as possible on the IBA webpage in a pre-publication electronic format and that the printed volume will appear in 2021 as early as possible. Papers of a historical nature, reviews of techniques, reviews of taxonomy, collection details etc are welcome. Please see the IBA webpage for past volumes which will give a flavour of contributions. Patrick and Mary are more than happy to discuss potential papers with you.

Patrick Wyse Jackson
Mary Spencer Jones

RECENT PUBLICATIONS

The following list includes bryozoan related works either published since the previous issue of the *IBA Bulletin* as sent in to the editor. As always, members are encouraged to support future compilations by continuing to send complete citations to the IBA secretary at any time. Accuracy of your citation is assured if sent in bibliographic format, if re-drafting is required by the editor accuracy is not guaranteed! Reprints will be gratefully received by the IBA archivist, Mary Spencer Jones.

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