Table 1. Results of histochemical and enzymatic experiments on tintinnid loricae of 24 genera. "-" — not effected, "+" — effected, "#" — dissolved, "+/-" — weak reaction or inconsistent results, "#/-" — only collar dissolved. Data of the present study are in bold. See text for further explanations.

References	Genera	Specific epithets	Cold sodium hydroxide/potassium hydroxide	Hot sodium hydroxide/potassium hydroxide	Van-Wisselingh-test	Chitinase	Chitinous/chitin-like substance indicated	Periodic acidic Schiff reaction	Neutral mucosubstances and polysaccharides indicated	Possibly cellulose-like substance	Cellulose indicated	Glycogen and/or mucins indicated	Millon's reaction	Tyrosine indicated	Cold concentrated nitric acid + potassium hydroxide	Nitric acid + concentrated ammoniac	Xanthoproteins and alkaloids indicated	Mercuric bromophenol blue	Alcian blue stain	Acid mucosubstances indicated	Acid (sulphated) mucosubstances; low pH	Protease of *Streptomyces griseus*	Proteinase K from *Engyodontium album*	Methylen blue stain	Borrel's (methylen blue) stain	Acid fuchsin stain	Phosphor-molybdenum acid	Iodine/Lugol's solution	Cold concentrated nitric acid	Hot nitric acid	Concentrated sulphuric acid + sugar	Sudan black B stain	Lipids indicated	Concentrated hydrofluoric acid	Iron haematoxylin stain	Concentrated sulphuric acid after KOH	Cold concentrated sulphuric acid	Eosin stain	Mallory's triple connective tissue stain	Pectins and/or mucins indicated	Concentrated hydrochloric acid	Concentrated acetic acid	Iodine potassium iodide + sulphuric acid	Iodine + sulfuric acid	Hot ammoniac	Sodium hypochlorite	Hydrogen peroxide	Proteins, alkaloids, and/or glycosids indicated	Silicate suggested	Lorica forming granules of morula type	Lorica forming granules of other types	Osmophilic lorica forming granules
Entz Jr. 1909b	*Amphorides*	*amphora*									-		-	-											#													-						-								
Daday 1887	*Amphorides*		-	-			+																											-		+																
this study	***Climacocylis***																	+					+																													
Gold & Morales 1977	*Codonaria*	*oceanica*																																						-												
this study	***Codonella***	***aspera***		#	-	-												+	-	-	-										-																					
Entz Jr. 1909b	*Codonella*	*aspera/elongata/galea*	#								-		-	-	-	+	+							-							-							-		-				-				-				
Hofker 1931b	*Codonella*	*cistellula*																							+																											
Entz Jr. 1909b	*Codonella*	*cistellula/dadayi*									-	+	-	-		+	+											+										+						-								
Entz Sr. 1885	*Codonella*	*cratera*					+																																													
Foissner & Wilbert 1979	*Codonella*	*cratera*																						+/-															+/-													
Entz Jr. 1909b	*Codonella*	*cratera/relicta*	-	-			+																	-						#								-		-	#											
Entz Jr.1909a	*Codonella*	*cratera/lariana/relicta*	-	-			+																	-						#								-		-	#											
Haeckel 1873	*Codonella*	*galea*					+																																													
Hofker 1931b	*Codonella*	*galea*																																																		
Hofker 1931b	*Codonella*	*nationalis*																							+																											
Daday 1887	*Codonella*		-	-			+																											-		+																
Schweyer 1909	*Codonella*									+																																										
Gold 1980	*Codonellopsis*	*americana*																																-																		
Wasik *et al.* 1997	*Codonellopsis*	*gaussi*																+	+	+																															
Entz Jr. 1909b	*Codonellopsis*	*lata/longa/speciosa*	#/-								-		-	-		+	+														-							+/-						-				-				
this study	***Codonellopsis***	***schabi***																	-	-	-																															
Bussers & Jeuniaux 1974	*Codonellopsis*	*schabi*	-	#																														-							-												
Entz Jr. 1909b	*Coxliella*	*decipiens*														-	-																																			
Wasik *et al.* 1997	*Cymatocylis*	*affinis/convallaria*																+	-	-																															
Wasik & Mikolajczyk 1992	*Cymatocylis*	*convallaria*																															+																	+		+
Ehrenberg 1854	*Cyttarocylis*	*acuminata*																																															+			
Laval-Peuto 1975	*Cyttarocylis*	*brandti*																																																+		
Fol 1881	*Cyttarocylis*	*cassis*	-	-			+																											-						-	-											
Entz Jr. 1909b	*Cyttarocylis*	*cassis*					+									-	-																				-					+										
Daday 1887	*Cyttarocylis*		-	-			+																											-		+																
Ehrenberg 1854	*Dictyocysta*	*lepida*																																														+			
Hofker 1931b	*Dictyocysta*	*lepida*																							+																											
Hofker 1931b	*Dictyocysta*	*mitra*																							+																											
Biedermann 1893	*Dictyocysta*	*speciosa*					+																																													
Entz Jr. 1909b	*Dictyocysta*	*speciosa/lepida/nidulus*	#/-								-		-	-	-	+	+							-							-							+/-		-				-				-				
Daday 1887	*Dictyocysta*		-	-			+																											-		+																
Hofker 1931b	*Epiplocylis*	*reticulata*																							+																											
this study	***Eutintinnus***	***brandti***				-												+					+																													
Entz Jr. 1909b	*Eutintinnus*	*fraknoi*									-		-	-	-									-																-				-								
Schweyer 1909	*Eutintinnus*									+																																										

Entz Jr. 1909b	*Favella*	*adriatica/ehrenbergii*	#	#												-	-												#								#				#				-						
this study	***Favella***	***arcuata***																					-																							-					
Entz Jr. 1909a	*Favella*	*ehrenbergii*		#																																															
Kofoid & Campbell 1939	*Favella*	*franciscana*										+	+																																						
Campbell 1927	*Favella*																		+															+																	
Laval-Peuto 1994	*Favella*																																																+	
Schweyer 1909	*Favella*								+																																										
Gold 1980	*Helicostomella*	*subulata*																																-																		
Wasik *et al.* 1997	*Helicostomella*	*subulata*																+	-	-																															
this study	***Helicostomella***	***subulata***																-																																	
Wasik *et al.* 1997	*Laackmanniella*	*naviculaefera*																+	+/-	+/-																															
Kofoid & Campbell 1939	*Leprotintinnus*	*neriticus*										+	+																																						
Sokolova & Gerassimova 1984	*Parafavella*	*denticulata*																																														+			
Wasik *et al.* 1997	*Parafavella*	*denticulata*																+	+/-	+/-																															
Gold & Morales 1975a	*Parafavella*	*gigantea*																+																					+													
Hedin 1975	*Parafavella*	*gigantea*																															+															-	+	+
Fol 1881	*Petalotricha*	*ampulla*	-	-			+																											-						-	-									
Entz Jr. 1909b	*Petalotricha*	*ampulla*	-	-			+				-	+			+	+	+										+	-		-						+							-				-			
Laval 1972	*Petalotricha*	*ampulla*																															+															+		+
Laval-Peuto 1994	*Petalotricha*	*ampulla*																																														+		
Daday 1887	*Petalotricha*		-	-			+																											-		+														
Entz Jr. 1909b	*Proplectella*	*subacuta*									-	+			+	+	+										+																-							
Entz Jr. 1909b	*Rhabdonella*	*spiralis*									-	+			-	-	-										+																-							
Fol 1881	*Rhabdonella*	*spiralis*	-	-			+																											-						-	-									
Hofker 1931b	*Rhabdonella*	*spiralis*																						+																										
this study	***Rhabdonella***	***spiralis***		#	-	-		-	-				-	-				+	-	-	-	-	-												-											-					
Gold 1980	*Stenosemella*	*oliva*																																-																	
this study	***Stenosemella***	***pacifica***																					-																							-					
Entz Jr. 1909b	*Stenosemella*	*ventricosa*	#								-		-	-		-	-							+					#								-			+	#			-	-						
Gold 1980	*Stenosemella*	*ventricosa*																																-																	
this study	***Stenosemella***	***ventricosa***		#	-	-													+	+/-	+											-		-																	
Entz Jr. 1909a	*Tintinnidium*	*fluviatile*																						+																+											
Entz Jr. 1909b	*Tintinnidium*	*fluviatile*																						+																+											
Foissner & Wilbert 1979	*Tintinnidium*	*fluviatile*																						+																+											
Fauré-Fremiet 1908	*Tintinnidium*	*inquilinum*	-	-																																									+					
Entz Jr. 1909b	*Tintinnidium*	*pusillum*																						+																+											
Entz Jr. 1909a	*Tintinnidium*	*semiciliatum*																						+																+											
Entz Jr. 1909b	*Tintinnidium*	*semiciliatum*																						+																+											
Entz Jr. 1909b	*Tintinnopsis*	*beroidea/rotundata*	-								-	+	-	-		-	-							+/-				+			-						-			+/-	+	+		-				-				
Fol 1881	*Tintinnopsis*	*campanula*	-	-			+																											-							-	-									
Entz Jr. 1909a	*Tintinnopsis*	*campanula*																						+																+											
Entz Jr. 1909b	*Tintinnopsis*	*campanula*	#								-		-	-										+							-						-			+				-				-				
Hofker 1931b	*Tintinnopsis*	*campanula*																							+																										
this study	***Tintinnopsis***	***compressa***				-												-																												-					
Entz Jr. 1909b	*Tintinnopsis*	*cylindrica*																						-																-											
this study	***Tintinnopsis***	**cf. *cylindrica***				-		-	-				-	-				-	-	-	-		-																							-					
Entz Jr. 1909a	*Tintinnopsis*	*cylindrata*																						-																-											
Foissner & Wilbert 1979	*Tintinnopsis*	*cylindrata*																						-																-											
this study	***Tintinnopsis***	***levigata***																					+																							-					
Entz Jr. 1909b	*Tintinnopsis*	*lindeni*									-				+	+	+																										-								
Wasik *et al.* 1997	*Tintinnopsis*	*lobiancoi*																+	-	-																															
Laval-Peuto *et al.* 1979	*Tintinnopsis*	*parva*																																																+	
Gold 1980	*Tintinnopsis*	*rapa*																																-																	
Gold 1980	*Tintinnopsis*	*wangi*																																#																	
Daday 1887	*Tintinnopsis*		-	-			+																											-		+														

Hofker 1931a	*Tintinnopsis*						+																																										
Merkle 1909	*Tintinnopsis*																								+	+									#				#										
Schweyer 1909	*Tintinnopsis*								+																																								
Gold 1968	*Tintinnopsis*																+																																
Daday 1887	*Tintinnus*		-	-			+																										-		+														
Daday 1887	*Undella*		-	-			+																										-		+														

REFERENCES

- Biedermann R. (1893) Ueber die Structur der Tintinnen-Gehäuse. PhD Thesis, Univ. Kiel: 1–38 + Plates 1–3
- Bussers J. C., Jeuniaux C. (1974) Recherche de la chitine dans les productions métaplasmatiques de quelques ciliés. *Protistologica* **10:** 43–46 (with English summary)
- Campbell A. S. (1927) Studies on the marine ciliate *Favella* (Jörgensen), with special regard to the neuromotor apparatus and its rôle in the formation of the lorica. *Univ. Calif. Publ. Zool.* **29:** 429–452
- Daday E. von (1887) Monographie der Familie der Tintinnodeen. *Mitt. zool. Stn Neapel* **7:** 473–591 + Plates 18–21
- Ehrenberg H. (1854) Systematische Charakteristik der neuen mikroskopischen Organismen des tiefen atlantischen Oceans. *Ber. Verh. K. Preuss. Akad. Wiss. Berl.* **year 1854:** 236–250
- Entz G. Sr. (1885) Zur näheren Kenntnis der Tintinnoden. *Mitt. zool. Stn Neapel* **6:** 185–216 + Plates 13, 14
- Entz G. Jr. (1909a) Die Süsswasser-Tintinniden. *Math. naturw. Ber. Ung.* **25:** 197–225 + Plates 1–4
- Entz G. Jr. (1909b) Studien über Organisation und Biologie der Tintinniden. *Arch. Protistenk.* **15:** 93–226 + Plates 8–21
- Fauré-Fremiet E. (1908) Le *Tintinnidium inquilinum*. *Arch. Protistenk.* **11:** 225–251 + Plate 12
- Foissner W., Wilbert N. (1979) Morphologie, Infraciliatur und Ökologie der limnischen Tintinnina: *Tintinnidium fluviatile* Stein, *Tintinnidium pusillum* Entz, *Tintinnopsis cylindrata* Daday und *Codonella cratera* (Leidy) (Ciliophora, Polyhymenophora). *J. Protozool.* **26:** 90–103 (with English summary)
- Fol H. (1881) Contribution a la connaissance de la famille des Tintinnodea. *Archs Sci. phys. nat.* **5:** 5–24 + Plate 1
- Gold K. (1968) Some observations on the biology of *Tintinnopsis* sp. *J. Protozool.* **15:** 193–194
- Gold K. (1980) SEM studies on the lorica of various Tintinnina. *Scanning Electron Microsc.* **3:** 537–541
- Gold K., Morales E. A. (1975a) Tintinnida of the New York Bight: loricae of *Parafavella gigantea*, *P. parumdentata*, and *Ptychocylis obtusa*. *Trans. Am. microsc. Soc.* **94:** 142–145
- Gold K., Morales E. A. (1977) Studies on the Tintinnida of Enewetak Atoll. *J. Protozool.* **24:** 580–587
- Haeckel E. (1873) Ueber einige neue pelagische Infusorien. *Jen. Z. Med. Naturwiss.* **7:** 561–568 + Plates 27, 28
- Hedin H. (1975) On the ultrastructure of *Favella ehrenbergii* (Claparède & Lachmann) and *Parafavella gigantea* (Brandt), Protozoa, Ciliata, Tintinnida. *Zoon* **3:** 11–18
- Hofker J. (1931a) Die Bildung der Tintinnengehäuse. *Tijdschr. Ned. Dierk. Vereen. Ser.* **3:** 144–150
- Hofker J. (1931b) Studien über Tintinnoidea. *Arch. Protistenk.* **75:** 315–402
- Kofoid C. A., Campbell A. S. (1939) Reports on the scientific results of the expedition to the eastern tropical Pacific, in charge of Alexander Agassiz, by the U. S. Fish Commission Steamer “Albatross,” from October, 1904, to March, 1905, Lieut.-Commander L. M. Garrett, U. S. N. Commanding. XXXVII. The Ciliata: The Tintinnoinea. *Bull. Mus. comp. zool., Harv.* **84:** 1–473 + Plates 1–36
- Laval M. (1972) Ultrastructure de *Petalotricha ampulla* (Fol). Comparaison avec d’autres Tintinnides et avec les autres ordres de ciliés. *Protistologica* **8:** 369–386 (with English summary)
- Laval-Peuto M. (1975) Cortex, périlemme et réticulum vésiculeux de *Cyttarocylis brandti* (Cilié Tintinnide). Les ciliés a périlemme. *Protistologica* **11:** 83–98 (with English summary)
- Laval-Peuto M. (1994) Classe des Oligotrichea Bütschli, 1887. Ordre des Tintinnida Kofoid et Campbell, 1929. In: Traité de Zoologie. Anatomie, Systématique, Biologie. II. Infusoires Ciliés. 2. Systématique, (Ed. P. de Puytorac). Masson, Paris, Milano, Barcelona: 181–219
- Laval-Peuto M., Gold K., Storm E. R. (1979) The ultrastructure of *Tintinnopsis parva*. *Trans. Am. microsc. Soc.* **98:** 204–212
- Merkle H. (1909) Untersuchungen an Tintinnodeen der Ost- und Nordsee. *Wiss. Meeresunters., Abt. Kiel* **11:** 139–186 + Plates 2, 3
- Schweyer A. (1909) Zur Kenntnis des Tintinnodeenweichkörpers, nebst einleitenden Worten über die Hülsenstruktur und die Hülsenbildung. *Arch. Protistenk.* **18:** 134–189 + Plates 10–11
- Sokolova Y. Y., Gerassimova Z. P. (1984) The ultrastructure of the ciliates *Parafavella denticulata* Ehrenberg, 1840. *Tsitologiya* **26:** 1237–1245 + Plates 1–4 (in Russian with English summary)
- Wasik A., Mikołajczyk E. (1992) The morphology and ultrastructure of the Antarctic ciliate, *Cymatocylis convallaria* (Tintinnina). *Acta Protozool.* **31:** 233–239
- Wasik A., Mikołajczyk E., Gołębiowska M., Sikora J. (1997) X-ray analysis and cytochemical staining of some tintinnid loricae. *Acta Protozool.* **36:** 153–155