

Appendix 1. Characters

Continuous characters.

- 1 Inclination of the dorsal line of the pallial sinus measured with respect to the antero-posterior valve axis.
- 2 Inclination of the anterior adductor muscle scar with respect to the antero-posterior valve axis.
- 3 Inclination of the posterior adductor muscle scar with respect to the antero-posterior valve axis.
- 4 Inclination of 3a tooth with respect to the antero-posterior valve axis.
- 5 Inclination of 1 tooth with respect to the antero-posterior valve axis.
- 6 Inclination of 3b tooth with respect to the antero-posterior valve axis.
- 7 Pallial sinus width/valve height ratio.
- 8 Nymph length/valve length ratio.
- 9 2a tooth width/2b width ratio.
- 10 4b tooth width/2b width ratio.
- 11 3a tooth width/1 width ratio.
- 12 3b tooth width/1 width ratio.
- 13 Shell length/height ratio.
- 14 Umbo position (Length measured from the umbo to the posterior margin over total length of the valve ratio).
- 15 Lunule length/valve height ratio.
- 16 4b tooth length/2b length ratio.

17 How much of the hinge plate is occupied by the 3a tooth (length of 3a/height of the hinge plate in the place of the 3a tooth).

18* Width of 2a tooth.

19* Width of 2b tooth.

20* Width of 4b tooth.

21* Width of 3a tooth.

22* Width of 1 tooth.

23* Width of 3b tooth.

24 Dorsal margin slope measured as a tangent that connects the umbo with the angle between the dorsal and posterior margin.

25 Height of the lateral margin of the nymph/nymph length.

Discrete characters.

26 Depth of the pallial sinus: Absent (0), Shallow (1), Deep, it does not reach the posterior cardinal tooth (2), Deep, it reach the posterior cardinal tooth (3).

27 Pallial sinus apex: Sharp (0), Rounded (1), Truncated (2).

28 Sculpture of the inner lateral margin of the nymph: Very rugous (0), Slightly rugous (1), Smooth (2).

29 Shape of the hinge plate margin: Straight (0), Slightly curved (1), Very curved (2).

30 Height of the hinge plate: Low (0), High (1).

31 2a tooth grooved: Absent (0), Present (1).

32 Curvature of 2a tooth: Straight (0), Anteriorly curved (1), Posteriorly curved (2).

33 Height of the 2a and 2b teeth: Equal height (0), 2a higher than 2b (1).

- 34 Morphology of 2b tooth (sensu Marwick, 1927): Smooth (0), Slightly grooved (1), Symmetrically bifid (2), Asymmetrically bifid (3).
- 35 2b tooth exceeding the edge of the hinge plate: Present (0), Absent (1).
- 36 Curvature of the 4b tooth: Slightly curved (0), Straight (1).
- 37 Separation between the 4b tooth and the nymph: Joined (0), Separated (1).
- 38 Height of the 3a tooth: Similar height of the other teeth (0), Lower than the other teeth (1), Higher than the other teeth (2).
- 39 Morphology of 1 tooth (sensu Marwick, 1927): Smooth (0), Symmetrically grooved (1), Asymmetrically grooved (2), Symmetrically bifid (3), Asymmetrically bifid (4).
- 40 3b tooth exceeding the edge of the hinge plate: Present (0), Absent (1).
- 41 Morphology of 3b tooth: Smooth (0), Grooved (1), Bifid (2).
- 42 Pedal retractor muscles scar: Deep (0), Shallow (1).
- 43 Shape of the pedal retractor muscle scar: Suboval (0), Subtriangular (1), Subquadrate (1).
- 44 Location of the pedal retractor muscle scar: Below the anterior cardinal teeth (0), Below the anterior end of the hinge plate.
- 45 Separation between the pedal retractor muscle scar and the anterior adductor muscle scar: Present (0), Absent (1).
- 46 Depth of the pedal lift muscle scars: Deep (0), Shallow (non visible) (1).
- 47 Shell shape: Trapezoid (0), Subquadrate (1), Sub-rounded (2), Suboval (less than two times larger than high) (3), Subtriangular (4), Ellipsoidal (two or more times larger than high).
- 48 Anterior margin shape: Angular (0), Rounded (1).

- 49 Type of sculpture: Only comarginal (0), Co-dominant radial and comarginal (1), Comarginal and radial present with comarginal dominance (2), Comarginal and radial present with radial dominance (3).
- 50 Distance among the elements of the comarginal sculpture: Very close (0), Widely spaced (1), Spaced towards the umbo and closer to each other towards the ventral margin (2), Closer towards the umbo and spaced towards the ventral margin of the disk (3).
- 51 Escutcheon: Marked, delimited from the surface of the shell (0), Slightly marked, smooth, continuous with the surface of the shell (1), Absent (2).
- 52 Sculpture of the escutcheon: Similar to the rest of the shell (0), Smooth (1), Absent (2).
- 53 Width of the escutcheon: wide (0), Slightly narrow (1), Very narrow (2), Absent (3).
- 54 Symmetry of the escutcheon: Wider in the left valve (0), Symmetric (1), Absent (2).
- 55 Length of the escutcheon: Reaches the dorsal side of the of posterior adductor muscle scar (0), Passes the muscle adductor scar (1), Halfway down the posterior side of the muscle adductor scar (2), Absent (3).
- 56 Lunule boundary: Not bounded (0), Bounded by a very shallow and narrow groove (1), Bounded by a narrow groove (2), Bounded by a deep groove (3), Absent (4).
- 57 Radial sculpture of the lunule: Absent (0), Present (1).
- 58 Shape of the lunule: Heart-shaped (0), Sub-rounded (1), Lanceolate (2), Suboval (3).
- 59 Convexity of the lunule: Flat (0), slightly concave (1), Very concave (2), Convex (3).
- 60 Anterior lateral tooth: Absent (0), Present (1).
- 61 Adult size: Large (0), Medium (1), Small (2), Very small (3).
- 62 Shape of the posterior margin of the shell: Rounded (0), Straight (1).
- 63 Angle between posterior and dorsal margins: Smooth (0), Acute (1), Absent (0).
- 64 Curvature of the dorsal margin: Curved (0), Straight (1).

- 65 Angle between posterior and ventral margins: Rounded (0), Smooth (1), Acute (2).
- 66 Thickness of the shell: Very thick (0), Thick (1), Thin (2), Very thin (3).
- 67 Crenulated inner margin: Absent (0), Present (1).
- 68 Radial sculpture: Absent (0), Thin ribs (1), Thick ribs (2), Thin lines (3).
- 69 Comarginal sculpture: Low and thin ribs (0), High and thin ribs (1), Low and thick ribs (2), High and thick ribs (3), Lamellae (4).
- 70 Presence of growth ribs with thin ribs interspaced: Absent (0), Present (1).
- 71 Bifid comarginal ribs: Absent (0), Present (1).
- 72 Anterior edge of the hinge plate ventrally projected: Absent (0), Present (1).
- 73 Relative height of the posterior margin with respect to the height of the shell: High (0), Low (1).
- 74 Inclination of the posterior margin with respect to the dorso-ventral axis of the shell: Inclined backwards (0), Vertical (1), Inclined forwards (2).
- 75 Presence of dorsal careen: Absent (0), Present (1).
- 76 Curvature of the dorsal edge of the pallial sinus: Straight (0), Slightly convex (1), Very convex (2).
- 77 Curvature of the ventral edge of the pallial sinus: Straight (0), Slightly concave (1), Very concave.
- 78 Height of the comarginal sculpture: Uniform height (0), Higher in the anterior region of the shell (1), Higher in the posterior region of the shell (2).
- 79 Presence of differentiated sculptured zones: Absent (0), Only in the posterior region (1), Only in the anterior and posterior region, not present in the middle of the shell (2).
- 80 Relative width of the lunule with respect to the sagittal axis of the shell: Wide (0), Narrow (1).

*Characters from 18 to 23 are lineal measures (not ratios), then in order to compare the measures were rescaled to the average size of *Tapes literatus*.