

## Appendix 2. Matrix

*Continuous characters.*

### *Dosinia concentrica*

2.214843848	1.937517892	1.872738827	1.835056102	2.076276255
2.187520721	0.424249672	0.709952153	0.680168	0.272817583
0.442965545	1.012149781	0.969346632	0.847721299	0.278753601
1.207948759	0.68588132	1.261994985	2.654766653	0.490412559
0.568878569	2.059732748	2.079349251	2.220108088	0.914559411

### *Marcia opima*

2.28780173	1.919078092	1.913813852	1.662757832	2.029383778
2.209515015	0.286306739	0.519374333	1.21387982	0.979796614
0.842392147	1.169751081	0.935043108	0.864121277	0.531478917
1.304960289	0.752845385	2.2032	1.3464	1.2852
0.9792	1.4076	2.0808	2.206825876	0.840132153

### *Ruditapes decussatus*

2.256878032	1.897627091	1.929418926	1.792391689	2.039697324
2.184691431	0.383907396	0.590691565	0.879390433	0.467970695
0.78122584	0.966829545	0.856142768	0.836267799	0.602059991
1.170261715	0.928528247	1.11392606	1.530347017	0.426831481
0.801610342	1.322136539	1.186799728	2.229596528	0.921801908

### *Ruditapes philippinarum*

2.24468936	1.904895788	1.946124619	1.836745966	2.056904851
2.201397124	0.432701822	0.519763082	0.81686037	0.320072817
0.692002564	0.939721605	0.883850335	0.84245471	0.633468456
1.172405651	0.954361641	1.476215408	2.437471952	0.514958863
0.78960359	1.922513089	1.544876589	2.223582462	0.942545583

### *Polittapes aureus*

2.273001272	1.908485019	2.015988105	1.769007871	2.066325925
2.200713734	0.395932225	0.448227688	0.84968196	0.462698788
0.547497148	0.732658855	0.889013894	0.826259028	0.662757832
1.104639092	0.779058988	1.432894737	2.060526316	0.580263158
0.793421053	2.25	1.196052632	2.19520755	0.870431597

### *Polittapes virgineus*

2.28254659	1.917330426	1.925999266	1.817344971	2.019808393
2.17801718	0.332473171	0.516178275	0.744472702	0.287374071
0.622838765	1.035779041	0.820137006	0.841716959	0.62324929
1.077439763	0.967906158	1.27228145	2.29989339	0.440405117
0.636140725	1.516950959	1.614818763	2.222716471	0.831491848

*Neotapes undulata*

2.238046103	1.86332286	2.045322979	1.73239376	2.029383778
2.149219113	0.291484678	0.416287591	1.023481096	0.522878745
0.903089987	1.079181246	0.748943979	0.817340835	0.740362689
1.164192036	0.929418926	1.458361204	1.381605351	0.460535117
0.921070234	1.151337793	1.381605351	2.225309282	0.807203047

*Irus carditoides*

2.267171728	1.908485019	1.886490725	1.857332496	1.995635195
2.1430148	0.556302501	0.479073143	0.726998728	0.522878745
0.552841969	1.132625565	0.77619055	0.890436125	0.591064607
1.017728767	1	0.830769231	1.557692308	0.519230769
0.519230769	1.453846154	1.973076923	2.235528447	0.788193189

*Protapes gallus*

2.113943352	1.886490725	1.968482949	1.707570176	2.041392685
2.190331698	0.433937662	0.528142985	1.124938737	0.756961951
0.733732111	1.051152522	0.86973243	0.809094159	0.643452676
1.091770373	0.869666232	1.306097561	0.979573171	0.559756098
0.606402439	1.119512195	1.25945122	2.195899652	0.899099504

*Katelsia scalarina*

2.290034611	1.851258349	1.986771734	1.86332286	2.120573931
2.212187604	0.407742836	0.466255279	0.95169532	0.499397649
0.823908741	0.823908741	0.901229244	0.893801473	0.505149978
1.356981401	0.943884058	1.924290999	2.150678175	0.679161529
0.905548705	1.358323058	0.905548705	2.214843848	0.862453122

*Tapes literatus*

2.281790638	1.960629308	1.851258349	1.884606581	2.076761772
2.213074825	0.490002829	0.551710829	0.555547862	0.038918066
0.895264649	1	0.822179421	0.895093454	0.556302501
1.230448921	1	1.15	3.20	0.35
1.20	1.75	3.10	2.225309282	0.888850981

*Retrotapes antarcticus*

2.261659304	1.979244778	1.903993826	1.945304422	2.113386207
2.229169703	0.254181681	0.68795566	0.894615228	0.476844128
0.906846277	1.253723883	0.940501152	0.900634955	0.477121255
1.274641978	0.881173429	1.811583012	2.382625483	0.702316602
1.173710074	1.466093366	2.564619165	2.215725665	0.909088191

*Retrotapes robustus*

2.280464547	1.951823035	1.857332496	1.88536122	2.063708559
2.223755454	0.303013036	0.603295957	0.809185855	0.440557414

0.823084918	1.146707469	0.94407214	0.894198153	0.477121255
1.292427594	0.835184494	1.533851825	2.421147276	0.660312893
0.91618414	1.378403165	1.931415213	2.198657087	0.905578594

*Retrotapes newtoni*

2.260071388	1.979244778	1.931966115	1.949390007	2.034762106
2.219235134	0.334406873	0.578417115	0.706248694	0.291698072
0.882432586	1.28770975	0.873547651	0.871811292	0.556302501
1.280322532	0.861399917	1.283190578	2.566381156	0.49143469
0.955567452	1.255888651	2.42987152	2.214843848	0.910172007

*Retrotapes ninfasiensis*

2.26873394	1.986771734	1.823908741	2.022565828	2.124938737
2.253661021	0.276265365	0.67309142	0.819223621	0.596924592
0.791148938	1.137604084	0.953126997	0.905901493	0.51851394
1.256485658	0.82869216	1.641337386	2.482522796	0.984802432
0.707826748	1.138677812	1.538753799	2.203214259	0.990460013

*Retrotapes striatolamellatus*

2.24468936	1.959041392	1.873126764	2.029383778	2.127104798
2.235528447	0.315793638	0.645741999	0.625508475	0.320053233
0.743588351	1.106224154	0.94055467	0.896437131	0.51851394
1.472609064	0.816684003	0.997065549	2.361471037	0.489786585
0.723018293	1.329420732	1.667606707	2.208620484	0.893184408

*Retrotapes fuegoensis*

2.267171728	1.959041392	1.832508913	1.954242509	2.100370545
2.227886705	0.424532527	0.634436138	0.84703254	0.472573627
0.93305321	1.204119983	0.918385144	0.919698757	0.414973348
1.338818557	0.878821412	1.724123539	2.452086811	0.727963272
1.149415693	1.340984975	2.14557596	2.212187604	0.964756604

*Retrotapes navidadis*

2.270678836	1.942008053	1.877946952	1.919078092	2.095750347
2.25446751	0.36902134	0.665124991	0.772731587	0.534159756
0.689210167	1.274927193	0.940690728	0.873476141	0.556302501
1.459392488	0.874444713	1.400338983	2.489491525	0.674237288
0.726101695	1.478135593	2.774745763	2.217483944	0.850011544

*Retrotapes lenticularis*

2.290924559	1.957128198	1.919078092	1.960946196	2.113274692
2.22685757	0.35167331	0.648449272	0.81568357	0.545210673
0.761080855	1.104390111	0.945240626	0.884393114	0.414973348
1.334970671	0.80832668	1.236187982	1.916658431	0.680470449
0.782541016	1.372282072	1.757881992	2.212187604	1.09028311

*Retrotapes exalbidus*

2.281446588	1.953803606	1.926155291	1.943584441	2.101309561
2.229053223	0.413539698	0.597505391	0.799670842	0.555403008
0.790307256	0.978852369	0.895465756	0.881596054	0.568201724
1.276422836	0.777899934	1.117982534	1.772411335	0.640794867
0.842577081	1.366120121	1.300677241	2.225309282	0.975446687

*Retrotapes fuenzalidae*

2.29125782	1.91349596	1.922621672	1.982271233	2.127039973
2.223054413	0.342422681	0.643452676	0.851258349	0.431363764
0.851258349	1.190331698	0.924279286	0.880813592	0.397940009
1.264817823	0.806179974	1.094538462	1.544711538	0.423692308
0.591403846	0.838557692	1.297557692	2.190331698	0.889014397

*Eurhomalea rufa*

2.262633605	1.859184501	1.849844475	1.841744398	2.07806624
2.199502018	0.460310909	0.653123774	0.900110253	0.613417137
0.954802045	1.14206073	0.867052267	0.848088766	0.322219295
1.128472629	0.912890225	1.327228916	1.67746988	0.645180723
1.078373494	1.188975904	1.631385542	2.244277121	0.88974654

*Frigichione permagna*

2.282259483	1.94610823	1.986637396	1.8831502	2.037546012
2.196286749	0.255272505	0.73239376	0.62324929	0.491361694
0.62324929	1.136720567	0.959041392	0.875061263	0.278753601
1.338456494	0.785329835	0.703340484	1.680983757	0.513438553
1.146444989	2.764128103	3.79100521	2.181843588	0.93702462

*Paleomarcia tatei*

2.259498314	1.860816964	1.967313918	1.828788748	2.042614885
2.21170775	0.146128036	0.643452676	?	?
0.812913357	1.385606274	0.924279286	0.812913357	0.462397998
?	0.86332286	?	?	?
0.961980836	1.332219512	3.715181185	2.201397124	0.867206726

*Eumarcia fumigata*

2.263517716	1.923399466	2.088809166	1.889525797	2.043047743
2.154789029	0.361727836	0.431363764	0.812913357	0.826074803
?	?	0.851258349	0.851258349	0.672097858
1.033423755	?	0.998526316	1.53	1.030736842
?	?	?	2.214843848	0.929774832

*Gomphina undulosa*

2.255272505	1.869525063	2.040206628	1.605951158	1.989894564
2.155062619	0.278753601	0.342422681	1	0.230448921

0.230448921	0.949390007	0.886490725	0.785329835	0.51851394
1.322219295	0.72427587	1.454639175	1.447628866	0.245360825
0.418865979	2.455360825	2.206494845	2.187520721	1.187726336

*Notopaphia elegans*

2.300812794	1.86266795	2.166282067	1.537693194	1.966986025
2.203522417	0.431363764	0.462397998	1.222716471	0.892094603
1.093421685	0.973127854	0.755874856	0.832508913	0.698970004
1.093421685	?	2.09049505	1.249752475	0.977079208
1.431534653	1.158861386	1.090693069	2.238046103	0.800012251

*Atamarcia sulcifera*

2.302525733	1.927421695	1.936312634	1.795532443	2.048053173
2.214631945	0.342422681	0.556302501	0.939519253	0.633468456
?	?	0.897627091	0.851258349	0.643452676
1.283301229	?	1.796426546	2.056778219	0.893874078
?	?	?	2.198657087	0.953787894

*Paphia rotundata*

2.228400359	1.86332286	2.041392685	1.814780146	1.975247941
2.184691431	0.380211242	0.591064607	1.11058971	0.447158031
0.792391689	1.004321374	0.716003344	0.86923172	0.69019608
1.385606274	0.857332496	1.405102041	1.086612245	0.309122449
1.03977551	1.676755102	1.695489796	2.209515015	0.550030991

*Venerupis corrugata*

2.260071388	1.919078092	2.007747778	1.883831713	2.046456142
2.176467485	0.414973348	0.672097858	1.012837225	1.06069784
0.740362689	1.100370545	0.832508913	0.86923172	0.579783597
1.041392685	0.919078092	1.004628633	0.971689989	1.119913886
0.780645856	1.426243272	1.795156082	2.238046103	0.713264192

*Discrete characters.*

*Dosinia concentrica*

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*Marcia opima*

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*Irus carditoides*

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*Protapes gallus*

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*Katelsysia scalarina*

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*Retrotapes fuenzalidae*

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*Eurhomalea rufa*

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*Frigichione permagna*

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*Notopaphia elegans*

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*Atamarcia sulcifera*

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*Paphia rotundata*

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*Venerupis corrugata*

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