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# Supplementary Appendix 4.2. Contemporary Geography Study of British Butterflies: Analyses

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## Analyses of continental geography of British butterfly species

For variables, see Supplementary Appendix 4.1. Data from Kudrna *et al.* (2015).

Analysis conducted in STATISTICA 9.1 (Statsoft Inc.) Prediction of British butterfly species (File: BritishPredSpecies)

## I. Principal Components Analysis of Nine Geographical Variables for European Species

### Active variables:

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Geographical variables

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tcMass  
tNorthMost  
tSouthMost  
tLatRange  
tcWestMost  
tcEastMost  
tLongRange  
tCoastRecs  
tSNorRecs

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t, transformed for normality; c, corrected for British Isles [+12 degrees]

### Supplementary variables:

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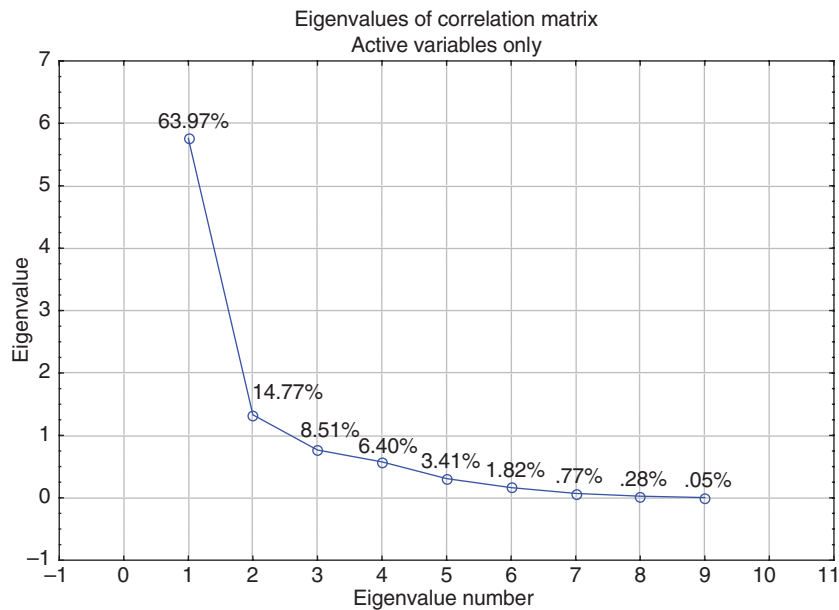
\*Britain: resident butterflies  
\*Britain: all butterflies including rare migrants  
\*cBritPred: butterflies predicted by climatic risk atlas of Settele *et al.* 2008

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**Table I.1.** Eigenvectors of correlation matrix. Active variables only.

| Geographical variables | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| toMass                 | -0.394   | 0.035    | 0.029    | 0.234    | -0.262   | -0.248   | -0.745   | 0.287    | -0.144   |
| tNorthMost             | -0.348   | -0.444   | 0.110    | 0.066    | -0.125   | -0.226   | 0.414    | -0.052   | -0.651   |
| tSouthMost             | 0.106    | -0.783   | 0.241    | 0.315    | 0.159    | 0.221    | -0.155   | 0.066    | 0.340    |
| tLatRange              | -0.400   | -0.040   | -0.050   | -0.009   | -0.341   | -0.412   | 0.343    | 0.021    | 0.657    |
| toWestMost             | 0.308    | -0.362   | -0.465   | -0.349   | -0.042   | -0.454   | -0.287   | -0.383   | -0.018   |
| toEastMost             | -0.298   | -0.169   | -0.730   | -0.135   | 0.109    | 0.382    | 0.072    | 0.411    | -0.003   |
| tLongRange             | -0.394   | 0.066    | -0.163   | 0.261    | -0.068   | 0.370    | -0.115   | -0.768   | 0.037    |
| tCoastRecs             | -0.359   | 0.070    | 0.062    | -0.051   | 0.864    | -0.321   | -0.054   | -0.060   | 0.067    |
| tSNorRecs              | -0.289   | -0.132   | 0.385    | -0.794   | -0.099   | 0.277    | -0.171   | -0.044   | 0.047    |

Letter 't' refers to variables having been transformed for normality



Scree plot

**Table I.2.** Eigenvalues of correlation matrix, and related statistics (BritishPredSpecies).  
Active variables only.

|   | Eigenvalue | % Total variance | Cumulative Eigenvalue | Cumulative % |
|---|------------|------------------|-----------------------|--------------|
| 1 | 5.76       | 63.97            | 5.757                 | 63.97        |
| 2 | 1.33       | 14.77            | 7.087                 | 78.75        |
| 3 | 0.77       | 8.51             | 7.853                 | 87.26        |
| 4 | 0.58       | 6.40             | 8.429                 | 93.66        |
| 5 | 0.31       | 3.41             | 8.736                 | 97.07        |
| 6 | 0.16       | 1.82             | 8.900                 | 98.89        |
| 7 | 0.07       | 0.77             | 8.970                 | 99.66        |
| 8 | 0.03       | 0.28             | 8.995                 | 99.95        |
| 9 | 0.00       | 0.05             | 9.000                 | 100.00       |

**Table I.3.** Factor-variable correlations (factor loadings), based on correlations (BritishPredSpecies).

| Variable    | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|-------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| toMass      | -0.946   | 0.041    | 0.026    | 0.177    | -0.146   | -0.100   | -0.196   | 0.046    | -0.010   |
| tNorthMost  | -0.836   | -0.512   | 0.096    | 0.050    | -0.069   | -0.092   | 0.109    | -0.008   | -0.045   |
| tSouthMost  | 0.254    | -0.903   | 0.211    | 0.239    | 0.088    | 0.089    | -0.041   | 0.011    | 0.023    |
| tLatRange   | -0.960   | -0.046   | -0.043   | -0.007   | -0.189   | -0.167   | 0.091    | 0.003    | 0.045    |
| toWestMost  | 0.740    | -0.417   | -0.407   | -0.265   | -0.023   | -0.184   | -0.076   | -0.061   | -0.001   |
| toEastMost  | -0.715   | -0.195   | -0.639   | -0.103   | 0.061    | 0.155    | 0.019    | 0.066    | -0.000   |
| tLongRange  | -0.946   | 0.076    | -0.142   | 0.198    | -0.038   | 0.150    | -0.030   | -0.123   | 0.003    |
| tCoastRecs  | -0.862   | 0.080    | 0.054    | -0.039   | 0.479    | -0.130   | -0.014   | -0.010   | 0.005    |
| tSNorRecs   | -0.695   | -0.152   | 0.337    | -0.603   | -0.055   | 0.112    | -0.045   | -0.007   | 0.003    |
| *Britain    | -0.627   | 0.057    | 0.185    | -0.204   | 0.270    | 0.061    | 0.083    | 0.138    | -0.023   |
| *BritainAll | -0.711   | 0.095    | 0.090    | -0.080   | 0.256    | -0.004   | 0.024    | 0.087    | -0.093   |
| *cBritPred  | -0.593   | 0.102    | 0.188    | -0.065   | 0.235    | 0.026    | 0.088    | 0.183    | -0.013   |

\*Supplementary variable

**Table I.4.** Factor coordinates of cases, based on correlations (BritishPredSpecies).

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1                                     | 3.152    | 1.617    | 1.263    | -0.152   | 0.391    | 0.223    | -0.2468  | 0.1425   | -0.1672  |
| 2                                     | -2.578   | 1.071    | -0.661   | 0.925    | 0.684    | -0.098   | -0.0985  | 0.0845   | -0.0337  |
| 3                                     | 0.532    | 1.205    | 0.716    | 0.665    | -0.637   | 0.099    | -0.0318  | -0.0198  | 0.0204   |
| 4                                     | -1.982   | 0.567    | -0.492   | 0.839    | 0.179    | -0.189   | 0.2564   | -0.0944  | -0.0265  |
| 5                                     | -0.794   | 0.589    | -1.109   | 0.625    | -0.772   | 0.757    | -0.0747  | -0.1264  | -0.0221  |
| 6                                     | 0.318    | -0.036   | -1.496   | -0.290   | -0.669   | -0.338   | -0.0013  | 0.1277   | -0.0380  |
| 7                                     | 2.939    | 0.737    | -0.845   | -1.020   | 0.405    | 0.069    | -0.1110  | 0.0968   | 0.0338   |
| 8                                     | -3.255   | -1.041   | 0.763    | -0.973   | 0.371    | -0.260   | -0.1886  | -0.2230  | 0.1102   |
| 9                                     | -0.528   | -2.446   | 0.126    | 0.172    | -0.860   | -0.118   | -0.3391  | 0.1279   | 0.0189   |
| 10                                    | 1.832    | 0.276    | -0.762   | -0.504   | -0.124   | -0.256   | -0.3252  | 0.1287   | 0.0224   |
| 11                                    | -4.078   | 0.357    | 0.776    | -0.816   | 0.355    | 0.545    | -0.0201  | 0.1557   | 0.0454   |
| 12                                    | -0.021   | 1.491    | 0.065    | 0.776    | -0.555   | 0.871    | -0.0833  | -0.0261  | 0.0467   |
| 13                                    | 0.451    | 0.841    | -1.118   | -0.028   | -0.546   | 0.199    | -0.3735  | -0.1980  | 0.0166   |
| 14                                    | -4.042   | -0.098   | 0.420    | -0.683   | 0.273    | -0.073   | 0.1857   | -0.0339  | -0.0192  |
| 15                                    | -2.194   | -0.403   | -0.467   | 1.048    | 0.858    | -0.211   | 0.0515   | -0.1106  | 0.0743   |
| 16                                    | -4.222   | -0.087   | 0.683    | -1.212   | 0.361    | 0.139    | -0.1641  | -0.0270  | 0.0252   |
| 17                                    | 2.380    | 0.785    | -1.383   | -1.027   | 0.247    | 0.181    | -0.1030  | 0.1370   | 0.0991   |
| 18                                    | -3.368   | -0.040   | 0.185    | -0.766   | -0.215   | 0.221    | -0.2938  | -0.0256  | -0.0353  |
| 19                                    | -0.451   | -1.148   | 0.171    | 0.621    | -1.163   | -0.975   | 1.0302   | -0.2519  | -0.0444  |
| 20                                    | -2.231   | 0.784    | -0.812   | 0.774    | 0.435    | -0.094   | 0.0939   | -0.0708  | -0.0209  |
| 21                                    | 1.344    | 0.113    | 0.772    | 0.462    | -0.326   | -0.137   | -0.0115  | -0.1787  | 0.0426   |
| 22                                    | 1.055    | -0.218   | -0.030   | 0.450    | -0.191   | 0.376    | -0.2453  | -0.2723  | 0.0209   |
| 23                                    | 2.428    | -0.490   | 0.887    | 0.152    | 0.109    | -0.254   | -0.1823  | -0.0548  | -0.0570  |
| 24                                    | -1.679   | 0.372    | -0.923   | 0.684    | 0.459    | 0.035    | -0.1254  | -0.1564  | 0.0331   |
| 25                                    | -0.329   | -3.952   | 1.275    | -0.254   | -0.505   | 0.664    | -0.5900  | 0.0418   | 0.1520   |
| 26                                    | 0.007    | 0.040    | -1.105   | 0.434    | -0.261   | 1.160    | 0.3642   | -0.4152  | 0.1396   |
| 27                                    | -0.634   | 0.595    | 0.050    | 0.562    | 0.379    | -0.377   | 0.1162   | -0.2822  | 0.0850   |
| 28                                    | -3.894   | 0.120    | 0.462    | -0.914   | 0.281    | 0.172    | -0.1406  | -0.0106  | 0.0081   |
| 29                                    | 0.353    | 1.201    | 0.738    | 0.688    | -0.494   | -0.045   | -0.1089  | 0.0044   | 0.0141   |
| 30                                    | -1.974   | 0.138    | -0.863   | 0.743    | 0.448    | -0.194   | 0.0449   | -0.1540  | 0.0098   |
| 31                                    | -0.346   | 0.312    | -1.089   | 0.604    | -0.481   | 1.027    | -0.1709  | -0.1983  | 0.0357   |
| 32                                    | 2.223    | -0.654   | 0.708    | 0.200    | 0.074    | -0.186   | -0.1931  | -0.0874  | -0.0443  |
| 33                                    | 0.198    | 0.129    | -1.510   | -0.219   | -0.727   | -0.310   | -0.2186  | 0.1361   | -0.0661  |
| 34                                    | 1.630    | 0.038    | -0.588   | -0.535   | -0.340   | -0.695   | 0.1628   | 0.1157   | 0.0542   |
| 35                                    | -1.522   | 0.958    | 0.844    | 0.930    | 0.564    | -0.989   | 0.2094   | 0.0479   | -0.0087  |
| 36                                    | 2.740    | 0.303    | 0.626    | -0.326   | 0.094    | -0.454   | 0.0299   | -0.0880  | 0.0414   |
| 37                                    | 1.402    | -0.966   | -1.350   | -0.336   | 0.135    | 0.440    | 0.2736   | 0.0736   | 0.1008   |
| 38                                    | -1.077   | 0.957    | -0.802   | 0.879    | -0.746   | 1.166    | 0.2597   | 0.0025   | 0.0111   |
| 39                                    | 0.583    | -0.212   | -1.597   | -0.465   | -0.523   | -0.313   | 0.2255   | 0.1932   | 0.0080   |
| 40                                    | -2.292   | 1.157    | -0.394   | 0.880    | 0.771    | -0.206   | -0.0366  | 0.0215   | 0.0007   |
| 41                                    | 2.244    | 0.588    | -0.804   | -0.796   | 0.028    | -0.221   | 0.0171   | 0.0257   | 0.1057   |
| 42                                    | -3.597   | 0.297    | -0.094   | 0.271    | 0.587    | -0.360   | 0.1445   | 0.0433   | -0.0590  |
| 43                                    | -2.970   | 0.833    | -0.581   | 0.972    | 0.876    | -0.412   | 0.0887   | 0.0666   | -0.0530  |
| 44                                    | 2.275    | 0.448    | -0.777   | -0.802   | 0.014    | -0.337   | -0.0633  | 0.1620   | 0.0758   |

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**Table I.4.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 45                                    | -2.956   | 0.708    | -0.592   | 0.996    | 0.473    | -0.394   | 0.2730   | 0.0735   | -0.1013  |
| 46                                    | 0.629    | 0.829    | -0.110   | 0.372    | -0.429   | 0.409    | 0.0772   | -0.3408  | 0.0868   |
| 47                                    | 2.633    | 0.382    | 0.604    | -0.319   | 0.008    | -0.550   | -0.0495  | -0.0457  | 0.0375   |
| 48                                    | -4.300   | 0.217    | 0.419    | -0.957   | 0.188    | -0.211   | 0.0501   | -0.0096  | -0.0931  |
| 49                                    | -2.190   | -0.296   | 0.059    | -1.011   | -1.518   | 0.577    | 0.1327   | -0.1995  | -0.0655  |
| 50                                    | -1.977   | -0.585   | -0.543   | -0.941   | -1.551   | 0.050    | 0.0196   | -0.1325  | -0.1444  |
| 51                                    | 2.061    | -0.631   | 0.674    | 0.288    | 0.019    | -0.153   | -0.3471  | -0.0669  | -0.0705  |
| 52                                    | 2.189    | 0.345    | 0.242    | -0.291   | -0.080   | -0.363   | 0.2124   | -0.2497  | 0.1112   |
| 53                                    | 1.046    | 0.523    | -1.277   | -0.527   | -0.463   | -0.352   | -0.1957  | 0.1139   | 0.0145   |
| 54                                    | 3.120    | 0.980    | -0.724   | -1.000   | 0.488    | 0.190    | -0.2739  | 0.0056   | -0.0431  |
| 55                                    | -0.473   | 0.049    | -1.410   | 0.242    | -0.877   | 0.002    | -0.3179  | -0.0057  | -0.0972  |
| 56                                    | 0.859    | 1.476    | 1.355    | 0.750    | -0.606   | -0.067   | -0.1289  | 0.3085   | -0.0049  |
| 57                                    | -4.709   | 0.349    | 0.946    | -1.277   | 0.196    | 0.253    | 0.1131   | 0.1355   | -0.0421  |
| 58                                    | 2.136    | 0.520    | -0.272   | -0.503   | -0.108   | -0.395   | -0.1012  | -0.0656  | 0.0701   |
| 59                                    | 0.633    | 1.237    | 0.768    | 0.644    | -0.602   | 0.099    | -0.0322  | -0.0173  | 0.0274   |
| 60                                    | 2.061    | 0.407    | -0.423   | -0.563   | -0.176   | -0.561   | -0.2390  | 0.1353   | 0.0325   |
| 61                                    | -4.124   | 0.266    | 0.253    | -0.651   | 0.238    | -0.290   | 0.2091   | -0.0230  | -0.0977  |
| 62                                    | -2.152   | 0.728    | -0.759   | 0.842    | 0.679    | 0.008    | -0.1683  | -0.0349  | 0.0169   |
| 63                                    | 2.649    | 0.365    | -0.260   | -0.650   | 0.153    | -0.299   | -0.1818  | 0.0702   | 0.0211   |
| 64                                    | 2.176    | -0.161   | -0.217   | -0.307   | 0.055    | -0.180   | -0.2120  | 0.0126   | 0.0038   |
| 65                                    | 0.829    | -1.295   | -1.159   | 0.203    | -0.072   | 0.476    | -0.4676  | 0.1897   | -0.0442  |
| 66                                    | -3.796   | 0.825    | 0.322    | -0.162   | 0.551    | 0.233    | 0.0581   | 0.1876   | -0.0112  |
| 67                                    | 0.161    | -0.679   | -1.349   | 0.114    | -0.586   | -0.069   | -0.4298  | 0.2283   | -0.0636  |
| 68                                    | 1.474    | -4.513   | 0.843    | 1.255    | 0.348    | 0.337    | 0.1189   | 0.1197   | 0.0450   |
| 69                                    | -2.522   | -0.487   | -0.788   | 0.833    | 0.761    | -0.852   | -0.0664  | -0.0982  | -0.0273  |
| 70                                    | -0.074   | -1.192   | -1.178   | 0.352    | -0.611   | -0.002   | -0.2008  | 0.1346   | -0.0349  |
| 71                                    | -2.125   | -1.963   | 0.341    | -1.062   | -0.784   | -0.144   | -0.2978  | -0.0766  | 0.0448   |
| 72                                    | 1.165    | 0.072    | 0.902    | 0.780    | -0.216   | 0.337    | -0.1801  | -0.1278  | 0.0035   |
| 73                                    | 2.029    | -4.483   | 1.332    | 1.179    | 0.462    | 0.113    | 0.1558   | 0.1575   | -0.0118  |
| 74                                    | 2.759    | 1.473    | 1.171    | -0.117   | 0.180    | 0.060    | 0.1225   | -0.0292  | 0.0615   |
| 75                                    | -1.853   | 1.292    | -0.643   | 0.832    | 0.586    | 0.374    | -0.1606  | 0.0175   | 0.0486   |
| 76                                    | 2.689    | 0.955    | 1.048    | -0.243   | 0.086    | -0.255   | 0.5644   | -0.1883  | 0.1655   |
| 77                                    | 1.242    | 1.559    | 1.486    | 0.632    | -0.447   | -0.023   | -0.0165  | 0.3311   | 0.0290   |
| 78                                    | 2.607    | 0.384    | 0.606    | -0.304   | -0.010   | -0.566   | -0.0988  | -0.0266  | 0.0279   |
| 79                                    | 2.239    | 0.224    | -0.603   | -0.616   | 0.064    | -0.186   | -0.0546  | 0.0375   | 0.0654   |
| 80                                    | 0.756    | 1.372    | 1.225    | 0.709    | -0.593   | 0.025    | 0.2231   | 0.1423   | 0.0440   |
| 81                                    | -0.987   | 1.421    | -0.377   | 0.852    | -0.248   | 0.680    | -0.2610  | 0.0568   | 0.0092   |
| 82                                    | 1.614    | 0.431    | -0.802   | -0.493   | -0.259   | -0.349   | -0.2724  | 0.0811   | 0.0335   |
| 83                                    | -4.620   | 0.125    | 0.987    | -1.096   | 0.262    | 0.327    | 0.0343   | 0.1670   | -0.0030  |
| 84                                    | 0.561    | 0.287    | -1.191   | 0.016    | -0.364   | 0.411    | -0.2475  | -0.2032  | 0.0432   |
| 85                                    | 0.633    | -0.862   | -1.108   | 0.066    | -0.330   | 0.104    | -0.1226  | 0.0653   | 0.0182   |
| 86                                    | -4.307   | 0.065    | 0.596    | -1.270   | 0.019    | 0.020    | 0.0078   | -0.0283  | -0.0606  |
| 87                                    | -4.677   | 0.374    | 0.883    | -1.140   | 0.232    | 0.193    | 0.1278   | 0.1463   | -0.0507  |
| 88                                    | 1.182    | -0.720   | -0.030   | 0.439    | -0.209   | 0.076    | -0.5761  | -0.0500  | -0.0639  |

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**Table I.4.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 89                                    | 0.116    | 0.966    | -0.234   | 0.420    | -0.763   | 0.067    | -0.0817  | -0.2112  | -0.0065  |
| 90                                    | 1.691    | 0.583    | -0.712   | -0.603   | -0.349   | -0.630   | -0.2318  | 0.1529   | 0.0276   |
| 91                                    | -0.798   | 0.943    | 0.116    | 0.803    | 0.185    | -0.009   | -0.2022  | -0.0756  | 0.0387   |
| 92                                    | -4.779   | 0.051    | 1.080    | -1.257   | 0.237    | 0.306    | 0.0523   | 0.1569   | -0.0066  |
| 93                                    | -4.592   | 0.415    | 0.767    | -0.900   | 0.274    | 0.105    | 0.1810   | 0.1581   | -0.0637  |
| 94                                    | 1.646    | -0.186   | 0.747    | 0.409    | -0.186   | -0.142   | -0.2137  | -0.1427  | -0.0018  |
| 95                                    | 0.071    | -0.433   | -1.555   | -0.691   | -0.943   | -1.071   | 1.4335   | 0.0529   | -0.0918  |
| 96                                    | -3.290   | 0.653    | -0.584   | 1.013    | 0.385    | -0.677   | 0.3873   | 0.0947   | -0.1742  |
| 97                                    | 1.603    | -1.488   | -1.223   | -0.318   | 0.188    | 0.216    | 0.0175   | 0.4743   | 0.0118   |
| 98                                    | 1.680    | 1.290    | 1.175    | 0.270    | -0.405   | -0.401   | -0.1622  | 0.1500   | 0.0239   |
| 99                                    | 1.457    | -4.597   | 0.708    | 1.255    | 0.427    | 0.523    | 0.1719   | 0.0801   | 0.0456   |
| 100                                   | 1.567    | -0.908   | -1.226   | -0.540   | 0.097    | 0.167    | 0.8043   | -0.0176  | 0.1867   |
| 101                                   | 2.193    | -0.623   | 0.775    | 0.244    | 0.048    | -0.207   | -0.2440  | -0.0694  | -0.0550  |
| 102                                   | -2.605   | -1.674   | 0.412    | -1.720   | -0.179   | -0.623   | -0.3709  | -0.1002  | 0.0558   |
| 103                                   | 0.186    | -1.599   | 1.601    | -1.309   | -0.994   | -0.593   | 0.2037   | -0.1224  | 0.1280   |
| 104                                   | 2.465    | 0.361    | 1.486    | 0.468    | 0.299    | 0.424    | -0.0646  | -0.0184  | -0.1254  |
| 105                                   | 3.544    | 1.233    | 1.076    | -0.407   | 0.632    | 0.351    | 0.3495   | -0.2552  | -0.0622  |
| 106                                   | -2.643   | 0.492    | -1.006   | 0.542    | 0.754    | -0.985   | 0.0282   | -0.1570  | -0.0985  |
| 107                                   | 0.644    | -0.190   | -1.374   | -0.347   | -0.512   | -0.288   | 0.1157   | 0.1130   | 0.0117   |
| 108                                   | -3.284   | -0.497   | 0.430    | -1.295   | -1.278   | 0.664    | 0.1806   | -0.1047  | -0.0592  |
| 109                                   | 0.913    | 1.550    | 1.260    | 0.759    | -0.526   | 0.117    | -0.2731  | 0.2696   | -0.0053  |
| 110                                   | 1.762    | 1.247    | 1.306    | 0.293    | -0.297   | -0.228   | 0.1658   | 0.1109   | 0.0754   |
| 111                                   | 0.913    | 0.343    | 1.250    | 0.229    | -0.497   | 0.095    | -0.4293  | -0.0022  | 0.0064   |
| 112                                   | -0.839   | 0.806    | 1.009    | 0.886    | -0.509   | -0.761   | 0.7211   | 0.0480   | -0.0590  |
| 113                                   | 1.044    | 1.452    | 1.297    | 0.627    | -0.458   | 0.110    | 0.2852   | 0.1235   | 0.0778   |
| 114                                   | -4.630   | 0.183    | 0.916    | -1.030   | 0.195    | 0.238    | 0.1501   | 0.1587   | -0.0329  |
| 115                                   | -4.646   | 0.384    | 0.851    | -1.077   | 0.230    | 0.176    | 0.1468   | 0.1488   | -0.0544  |
| 116                                   | 3.122    | 0.892    | -1.323   | -1.275   | 0.609    | 0.362    | -0.1230  | 0.2256   | -0.0109  |
| 117                                   | 1.562    | 0.591    | -1.325   | -0.749   | -0.201   | -0.190   | -0.0663  | 0.1162   | 0.0800   |
| 118                                   | 3.023    | 0.883    | -1.405   | -1.247   | 0.586    | 0.394    | -0.2097  | 0.2600   | -0.0262  |
| 119                                   | -0.918   | 0.364    | -1.237   | 0.321    | 0.292    | 0.031    | -0.3263  | -0.2011  | 0.0395   |
| 120                                   | -2.541   | 0.090    | -0.728   | 0.898    | 0.561    | -0.475   | 0.0715   | -0.0673  | -0.0394  |
| 121                                   | -0.014   | -0.841   | -1.333   | 0.096    | -0.691   | -0.231   | -0.0745  | 0.1735   | -0.0503  |
| 122                                   | 1.907    | 1.719    | 1.571    | 0.420    | -0.092   | 0.259    | 0.1881   | 0.2777   | 0.0794   |
| 123                                   | -4.205   | 0.188    | 0.730    | -0.676   | 0.120    | 0.354    | 0.3218   | 0.1387   | -0.0100  |
| 124                                   | -0.879   | 0.543    | -1.101   | 0.641    | -0.824   | 0.689    | -0.0359  | -0.1176  | -0.0362  |
| 125                                   | -4.039   | -0.267   | 0.471    | -1.226   | 0.133    | -0.061   | -0.1315  | -0.1076  | -0.0151  |
| 126                                   | -2.936   | -0.546   | 0.065    | -1.288   | -1.867   | 0.420    | 0.1992   | -0.1379  | -0.1705  |
| 127                                   | 3.038    | 0.660    | -0.817   | -1.010   | 0.489    | 0.167    | -0.0980  | 0.0732   | -0.0004  |
| 128                                   | -3.813   | 0.823    | 0.386    | -0.317   | 0.613    | 0.300    | 0.0457   | 0.1601   | 0.0151   |
| 129                                   | -3.303   | 0.199    | -0.007   | -0.586   | 0.092    | 0.020    | -0.0689  | -0.0943  | -0.0273  |
| 130                                   | 0.759    | 1.417    | 1.319    | 0.754    | -0.644   | -0.088   | -0.0164  | 0.2683   | 0.0019   |
| 131                                   | 2.901    | 0.849    | -1.402   | -1.221   | 0.501    | 0.292    | -0.2011  | 0.2872   | 0.0118   |
| 132                                   | -2.331   | 0.067    | -0.569   | 1.044    | 0.770    | -0.050   | -0.0108  | -0.0300  | 0.0413   |

*Continued*

**Table I.4.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 133                                   | 0.079    | 0.775    | -0.252   | 0.496    | -0.721   | 0.169    | -0.1263  | -0.1993  | -0.0038  |
| 134                                   | 3.267    | 0.534    | -0.611   | -0.967   | 0.668    | 0.393    | 0.2099   | -0.1816  | 0.0026   |
| 135                                   | 2.504    | 0.725    | 0.553    | -0.329   | -0.056   | -0.495   | -0.0060  | -0.1317  | 0.0729   |
| 136                                   | 3.341    | 0.965    | -0.665   | -1.111   | 0.581    | 0.196    | -0.0013  | -0.0595  | 0.0055   |
| 137                                   | 0.173    | 0.122    | -1.500   | -0.047   | -0.532   | 0.257    | -0.0482  | -0.1366  | 0.0231   |
| 138                                   | 0.869    | 1.444    | 1.354    | 0.722    | -0.597   | -0.069   | 0.0107   | 0.2690   | 0.0136   |
| 139                                   | -2.097   | 1.241    | -0.512   | 0.848    | 0.782    | 0.060    | -0.1132  | 0.0115   | 0.0361   |
| 140                                   | -1.018   | 1.239    | -0.484   | 0.915    | -0.918   | 0.779    | -0.0895  | 0.1068   | -0.0641  |
| 141                                   | -2.087   | 0.345    | -0.767   | 0.982    | -0.487   | 0.111    | 0.1306   | 0.0493   | -0.1144  |
| 142                                   | -1.961   | -0.605   | -0.925   | 0.687    | 0.551    | -0.704   | -0.1918  | -0.0916  | -0.0148  |
| 143                                   | -1.657   | -1.478   | 0.428    | -0.719   | -0.584   | -0.643   | 0.2156   | -0.2241  | 0.0415   |
| 144                                   | -3.554   | -0.650   | 0.729    | -1.321   | -0.279   | -0.103   | -0.0614  | -0.1822  | 0.0006   |
| 145                                   | 1.784    | 0.303    | -0.595   | -0.433   | -0.197   | -0.365   | -0.3469  | 0.1010   | 0.0158   |
| 146                                   | -4.778   | 0.315    | 0.960    | -1.280   | 0.171    | 0.207    | 0.1361   | 0.1398   | -0.0547  |
| 147                                   | -0.303   | 0.340    | -1.586   | -0.041   | -0.912   | -0.227   | -0.2787  | 0.0469   | -0.1146  |
| 148                                   | 2.984    | 0.613    | -0.342   | -0.847   | 0.328    | -0.138   | -0.0180  | -0.0190  | 0.0480   |
| 149                                   | -2.843   | 0.567    | -0.512   | 1.061    | 0.836    | -0.261   | 0.0991   | 0.0707   | -0.0199  |
| 150                                   | -3.363   | -0.669   | 0.577    | -1.149   | -0.414   | 0.107    | -0.1735  | -0.1331  | 0.0010   |
| 151                                   | 1.852    | -1.799   | -1.120   | -0.276   | 0.346    | 0.288    | -0.1748  | 0.6463   | -0.0789  |
| 152                                   | -2.451   | 0.226    | -0.310   | 1.141    | 1.024    | 0.008    | 0.1514   | 0.0068   | 0.0815   |
| 153                                   | -2.603   | 0.031    | -0.721   | 0.895    | 0.517    | -0.530   | 0.1864   | -0.0831  | -0.0470  |
| 154                                   | -0.998   | -0.224   | -0.867   | 0.813    | 0.128    | 0.566    | -0.2317  | -0.1520  | 0.0520   |
| 155                                   | -1.064   | -1.032   | -0.825   | 0.783    | 0.735    | 0.052    | -0.4521  | -0.1138  | 0.0723   |
| 156                                   | -4.204   | -0.024   | 0.580    | -1.076   | 0.246    | 0.038    | -0.0519  | -0.0204  | -0.0150  |
| 157                                   | -1.746   | -0.378   | -1.005   | 0.599    | 0.424    | -0.560   | -0.1898  | -0.1146  | -0.0153  |
| 158                                   | -4.060   | -0.484   | 0.535    | -1.682   | -0.092   | -0.059   | -0.1473  | -0.1889  | -0.0171  |
| 159                                   | 0.975    | 0.054    | -0.714   | -0.315   | -0.610   | -0.732   | 0.0421   | 0.0716   | -0.0107  |
| 160                                   | 1.678    | 1.126    | 1.111    | 0.264    | -0.419   | -0.468   | -0.2523  | 0.1294   | 0.0064   |
| 161                                   | 2.229    | 0.268    | -0.557   | -0.671   | -0.011   | -0.367   | 0.0327   | 0.0693   | 0.0820   |
| 162                                   | -2.685   | 0.662    | -0.563   | 1.023    | 0.620    | -0.144   | 0.1337   | 0.0649   | -0.0307  |
| 163                                   | 1.220    | -0.346   | -1.590   | -0.696   | -0.098   | 0.104    | 0.8880   | -0.0803  | 0.1830   |
| 164                                   | -2.356   | 0.428    | -0.800   | 0.796    | 0.763    | -0.359   | -0.1076  | -0.0857  | -0.0071  |
| 165                                   | 2.947    | -1.361   | -0.964   | -0.700   | 0.898    | 0.702    | 0.3847   | 0.2969   | -0.1243  |
| 166                                   | 2.775    | -1.338   | -0.954   | -0.593   | 0.798    | 0.640    | 0.1106   | 0.3668   | -0.1748  |
| 167                                   | -0.637   | 0.061    | -0.232   | 0.793    | -0.793   | 0.103    | 0.2217   | -0.1630  | -0.0253  |
| 168                                   | 1.968    | -1.409   | -1.170   | -0.523   | 0.309    | 0.156    | 0.2404   | 0.5014   | 0.0425   |
| 169                                   | -1.104   | 0.186    | -1.156   | 0.640    | -1.038   | 0.260    | -0.1055  | -0.0587  | -0.1182  |
| 170                                   | 2.043    | 0.255    | 0.390    | 0.023    | -0.044   | -0.097   | -0.2260  | -0.2083  | 0.0137   |
| 171                                   | -1.413   | 0.386    | -0.452   | 0.815    | -0.553   | -0.106   | 0.1723   | -0.0880  | -0.0797  |
| 172                                   | -0.454   | 0.017    | -1.307   | 0.296    | -0.740   | 0.331    | 0.1994   | -0.2369  | -0.0020  |
| 173                                   | -0.217   | 0.831    | -0.004   | 0.483    | 0.308    | -0.269   | -0.3336  | -0.2226  | 0.0617   |
| 174                                   | 2.156    | 1.116    | 1.130    | 0.031    | -0.208   | -0.422   | 0.0682   | 0.0469   | 0.0708   |
| 175                                   | 2.426    | 0.374    | 1.397    | 0.398    | 0.205    | 0.229    | -0.1383  | -0.0033  | -0.0976  |
| 176                                   | 3.334    | 1.244    | 1.143    | -0.316   | 0.503    | 0.241    | 0.3115   | -0.1633  | -0.0072  |
| 177                                   | 0.864    | 0.834    | 0.775    | 0.424    | -0.721   | -0.533   | -0.0359  | -0.0388  | -0.0095  |

*Continued*



**Table I.4.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 178                                   | 3.628    | -0.781   | 1.058    | -0.197   | 0.866    | 0.368    | 0.6451   | -0.3862  | -0.1492  |
| 179                                   | -3.080   | -0.402   | -0.125   | -0.631   | -0.432   | -0.125   | 0.0297   | -0.1474  | -0.0714  |
| 180                                   | -4.829   | 0.304    | 1.002    | -1.357   | 0.169    | 0.222    | 0.0918   | 0.1437   | -0.0533  |
| 181                                   | 3.440    | 0.468    | -0.302   | -0.945   | 0.654    | 0.192    | 0.2236   | -0.1448  | -0.0137  |
| 182                                   | 1.826    | 1.223    | 1.105    | 0.156    | -0.357   | -0.444   | -0.0557  | 0.0769   | 0.0472   |
| 183                                   | 2.673    | -0.311   | -0.341   | -0.465   | 0.423    | 0.193    | -0.1017  | -0.0111  | -0.0600  |
| 184                                   | -0.588   | 1.272    | -1.062   | 0.149    | -0.974   | 0.148    | 0.5490   | -0.3562  | -0.0494  |
| 185                                   | -1.950   | 0.941    | -0.649   | 0.964    | 0.480    | 0.464    | -0.1606  | 0.0630   | 0.0341   |
| 186                                   | 3.123    | 1.248    | 1.114    | -0.343   | 0.339    | 0.030    | 0.5136   | -0.1686  | 0.1266   |
| 187                                   | -1.887   | 0.767    | -0.794   | 0.827    | 0.459    | 0.229    | -0.1686  | -0.0394  | 0.0225   |
| 188                                   | 0.795    | 1.467    | 1.269    | 0.762    | -0.599   | 0.014    | -0.1217  | 0.2562   | 0.0015   |
| 189                                   | -2.796   | 0.682    | -0.545   | 1.018    | 0.842    | -0.240   | 0.0913   | 0.0595   | -0.0182  |
| 190                                   | 3.616    | 0.402    | -0.596   | -1.111   | 0.857    | 0.461    | 0.3991   | -0.1511  | -0.0483  |
| 191                                   | -2.130   | -0.540   | -0.844   | 0.775    | 0.643    | -0.636   | -0.1188  | -0.1156  | -0.0006  |
| 192                                   | -2.175   | 0.751    | -0.634   | 1.032    | 0.082    | 0.292    | 0.0067   | 0.1061   | -0.0397  |
| 193                                   | -3.325   | -0.392   | 0.015    | -0.801   | 0.347    | -0.239   | -0.1317  | -0.2028  | 0.0233   |
| 194                                   | 1.931    | 1.567    | 1.455    | 0.326    | -0.190   | -0.046   | -0.0029  | 0.2779   | 0.0489   |
| 195                                   | 3.511    | 0.337    | 0.613    | -0.549   | 0.612    | 0.093    | 0.3280   | -0.3125  | -0.0374  |
| 196                                   | -0.926   | 1.207    | 0.980    | 0.867    | 0.622    | -0.751   | -0.0376  | 0.0792   | 0.0426   |
| 197                                   | 0.782    | -0.195   | -1.586   | -0.461   | -0.387   | -0.135   | 0.0988   | 0.1860   | 0.0330   |
| 198                                   | -1.661   | -0.361   | -0.757   | 0.083    | -1.284   | 0.237    | 0.1805   | -0.1261  | -0.1107  |
| 199                                   | 1.576    | 1.444    | 1.318    | 0.398    | -0.323   | -0.061   | 0.1474   | 0.1260   | 0.0768   |
| 200                                   | -0.898   | -0.237   | -1.550   | -0.079   | -1.341   | -0.987   | 0.3855   | 0.1341   | -0.2700  |
| 201                                   | 1.035    | 0.530    | -1.266   | -0.521   | -0.413   | -0.205   | 0.0838   | -0.0688  | 0.0642   |
| 202                                   | 2.849    | 1.502    | 1.138    | -0.140   | 0.260    | 0.183    | 0.1515   | -0.0988  | 0.0529   |
| 203                                   | -3.067   | -0.284   | 0.038    | 0.006    | 0.739    | 0.091    | -0.2730  | -0.0512  | 0.0843   |
| 204                                   | 1.024    | 1.498    | 1.385    | 0.685    | -0.522   | -0.012   | -0.0005  | 0.2705   | 0.0255   |
| 205                                   | 2.250    | -1.365   | -0.975   | -0.498   | 0.482    | 0.374    | 0.3716   | 0.2549   | 0.0492   |
| 206                                   | 1.804    | -1.426   | -0.952   | -0.325   | 0.216    | 0.140    | 0.1810   | 0.3269   | 0.0445   |
| 207                                   | 3.165    | 0.626    | -0.353   | -0.924   | 0.433    | -0.056   | 0.0758   | -0.0469  | 0.0461   |
| 208                                   | -0.043   | 1.622    | -0.475   | 0.670    | -0.345   | 1.423    | -0.0648  | -0.1094  | 0.1005   |
| 209                                   | -4.499   | 0.080    | 0.870    | -0.779   | 0.354    | 0.243    | 0.1427   | 0.1686   | 0.0013   |
| 210                                   | -4.722   | 0.072    | 1.056    | -1.226   | 0.254    | 0.325    | 0.0639   | 0.1510   | -0.0002  |
| 211                                   | -2.889   | -0.241   | -0.512   | 1.115    | 0.537    | -0.507   | 0.3406   | -0.0140  | -0.0377  |
| 212                                   | -2.547   | -0.017   | -0.249   | 1.085    | 0.814    | -0.557   | 0.0947   | -0.0304  | 0.0057   |
| 213                                   | 0.563    | -0.634   | -1.320   | -0.140   | -0.435   | -0.096   | 0.0145   | 0.1319   | 0.0146   |
| 214                                   | -2.510   | -0.874   | -0.776   | 0.818    | 0.881    | -1.032   | -0.0464  | -0.1007  | -0.0053  |
| 215                                   | -3.831   | -0.197   | 0.287    | -0.879   | 0.152    | -0.127   | -0.0230  | -0.1022  | -0.0263  |
| 216                                   | -4.562   | -0.082   | 1.096    | -1.188   | 0.209    | 0.490    | 0.0698   | 0.1447   | 0.0397   |
| 217                                   | 2.795    | 0.332    | 0.624    | -0.329   | 0.130    | -0.406   | -0.0239  | -0.0868  | 0.0235   |
| 218                                   | -0.076   | -1.617   | -0.597   | 0.523    | -0.777   | -0.485   | -0.0503  | 0.1529   | -0.0451  |
| 219                                   | -3.261   | 0.064    | -0.034   | -0.340   | 0.265    | -0.038   | -0.0610  | -0.0812  | -0.0073  |
| 220                                   | -1.723   | 1.175    | -0.778   | 0.899    | -0.166   | 0.619    | -0.1123  | 0.0935   | -0.0268  |
| 221                                   | -4.128   | 0.245    | 0.637    | -0.372   | 0.409    | 0.268    | 0.1402   | 0.1881   | 0.0052   |
| 222                                   | -2.539   | -1.998   | 0.947    | -1.600   | 0.092    | -0.475   | -0.5237  | -0.1603  | 0.1482   |

*Continued*

**Table I.4.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 223                                   | 1.594    | -4.783   | 0.686    | 1.299    | 0.561    | 0.673    | -0.0621  | 0.1752   | -0.0795  |
| 224                                   | -2.279   | 0.029    | -0.668   | 0.974    | 0.842    | -0.209   | -0.2704  | -0.0351  | 0.0234   |
| 225                                   | -2.387   | -1.307   | 0.728    | -0.750   | -0.762   | 0.012    | 0.0257   | -0.1965  | 0.0459   |
| 226                                   | -4.236   | -0.307   | 0.782    | -1.339   | -0.004   | 0.262    | -0.0452  | -0.0301  | 0.0114   |
| 227                                   | -0.582   | -3.218   | 0.921    | -0.410   | -0.840   | 0.101    | -0.2323  | 0.0326   | 0.1449   |
| 228                                   | -0.343   | -3.139   | 0.717    | -0.058   | -0.750   | -0.023   | -0.2003  | 0.0776   | 0.1160   |
| 229                                   | 1.247    | 0.354    | -0.253   | -0.099   | -0.414   | -0.315   | 0.0483   | -0.2395  | 0.0640   |
| 230                                   | 2.173    | -4.511   | 1.186    | 1.067    | 0.611    | 0.318    | 0.4057   | 0.0512   | 0.0173   |
| 231                                   | -1.338   | -1.158   | -0.074   | 0.620    | 0.269    | -1.240   | 0.7807   | -0.3182  | 0.0595   |
| 232                                   | 0.558    | 0.005    | 0.229    | 0.747    | -0.388   | 0.432    | -0.1836  | -0.2045  | 0.0231   |
| 233                                   | 1.467    | -4.610   | 0.589    | 1.149    | 0.389    | 0.379    | 0.1431   | 0.2175   | 0.0462   |
| 234                                   | -4.241   | -0.753   | 0.992    | -1.253   | 0.392    | 0.399    | -0.2317  | -0.0169  | 0.1193   |
| 235                                   | -0.403   | -1.978   | 0.086    | -0.005   | -1.000   | -0.625   | 0.6210   | -0.1068  | 0.0478   |
| 236                                   | -0.496   | -1.041   | -0.820   | 0.533    | -0.855   | -0.149   | 0.3397   | -0.1401  | -0.0187  |
| 237                                   | -1.954   | 0.395    | -0.822   | 0.790    | 0.514    | -0.015   | -0.0695  | -0.1089  | 0.0211   |
| 238                                   | -1.073   | 0.285    | -0.721   | 0.715    | -0.606   | 0.221    | 0.1266   | -0.1490  | -0.0360  |
| 239                                   | -3.383   | -0.628   | 0.588    | -1.087   | 0.107    | 0.049    | -0.2996  | -0.1531  | 0.0606   |
| 240                                   | -0.579   | 1.419    | -0.431   | 0.817    | -0.685   | 1.013    | -0.1102  | 0.0240   | 0.0119   |
| 241                                   | -0.297   | 1.516    | -0.455   | 0.732    | -0.506   | 1.225    | -0.0425  | -0.0577  | 0.0678   |
| 242                                   | 1.635    | 1.541    | 1.589    | 0.430    | -0.265   | 0.020    | 0.5106   | 0.2550   | 0.1200   |
| 243                                   | -3.094   | 0.749    | -0.271   | 1.237    | 0.648    | -0.034   | 0.5463   | 0.2102   | -0.0343  |
| 244                                   | 1.466    | -0.345   | 0.060    | 0.209    | -0.184   | -0.058   | -0.2654  | -0.1546  | 0.0057   |
| 245                                   | 1.453    | 1.428    | 1.363    | 0.457    | -0.424   | -0.202   | -0.0105  | 0.2329   | 0.0372   |
| 246                                   | 1.423    | -4.728   | 0.674    | 1.334    | 0.450    | 0.582    | -0.0772  | 0.1803   | -0.0356  |
| 247                                   | 2.190    | -0.697   | 0.750    | 0.284    | 0.089    | -0.113   | -0.3035  | -0.0782  | -0.0812  |
| 248                                   | -1.414   | -1.065   | -0.982   | 0.628    | -0.093   | -0.488   | 0.1048   | -0.0873  | -0.0157  |
| 249                                   | -3.867   | 0.170    | 0.182    | -0.272   | 0.477    | -0.217   | 0.0449   | 0.0219   | -0.0419  |
| 250                                   | -0.765   | 1.127    | -0.646   | 0.724    | -0.848   | 0.687    | -0.0496  | -0.0469  | -0.0347  |
| 251                                   | -2.452   | -0.194   | -0.270   | 1.156    | 1.018    | -0.327   | -0.0409  | -0.0218  | 0.0573   |
| 252                                   | -2.919   | -0.972   | 0.380    | -0.862   | 0.324    | -0.343   | -0.2956  | -0.2201  | 0.0802   |
| 253                                   | -1.822   | 1.170    | -0.584   | 0.704    | 0.769    | -0.106   | -0.2562  | -0.0828  | 0.0373   |
| 254                                   | 1.318    | 1.687    | 0.862    | 0.586    | -0.067   | 0.918    | -0.0040  | -0.0963  | 0.0834   |
| 255                                   | 1.039    | -0.546   | -1.492   | -0.441   | -0.181   | 0.060    | 0.2799   | 0.1335   | 0.0862   |
| 256                                   | 2.719    | -0.963   | 0.770    | 0.150    | 0.404    | 0.076    | -0.2246  | -0.0878  | -0.1867  |
| 257                                   | -4.053   | -0.281   | 0.424    | -1.114   | 0.145    | -0.146   | -0.0530  | -0.1082  | -0.0276  |
| 258                                   | -1.436   | -0.635   | -0.982   | 0.612    | 0.380    | -0.361   | -0.1626  | -0.1273  | 0.0219   |
| 259                                   | -0.514   | -1.267   | -1.144   | 0.435    | -0.836   | -0.183   | 0.1522   | 0.0380   | -0.0447  |
| 260                                   | -3.027   | 0.364    | -0.321   | 0.146    | 0.602    | -0.212   | -0.1231  | -0.0541  | -0.0111  |
| 261                                   | 0.528    | 1.325    | 1.194    | 0.789    | -0.714   | -0.071   | 0.0856   | 0.2000   | 0.0004   |
| 262                                   | -2.571   | -0.999   | -0.039   | -1.075   | 0.316    | -0.039   | -0.5210  | -0.2021  | 0.1030   |
| 263                                   | -2.581   | 0.691    | -0.579   | 1.043    | 0.464    | -0.048   | 0.0381   | 0.0982   | -0.0431  |
| 264                                   | -0.302   | 1.082    | 1.212    | 0.650    | 0.717    | -1.061   | -0.0039  | 0.0396   | 0.0749   |
| 265                                   | -2.545   | 0.715    | -0.579   | 1.008    | 0.606    | -0.030   | 0.0884   | 0.0599   | -0.0142  |
| 266                                   | -1.132   | 0.614    | -0.881   | 0.897    | -0.849   | 0.897    | -0.0466  | 0.0182   | -0.0465  |

*Continued*

**Table I.4.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 267                                   | 1.940    | -0.249   | 0.596    | 0.136    | -0.161   | -0.417   | -0.2142  | -0.0630  | -0.0037  |
| 268                                   | 0.034    | -0.719   | -1.245   | 0.333    | -0.524   | 0.253    | -0.4297  | 0.0611   | -0.0388  |
| 269                                   | 0.190    | -0.900   | -1.296   | 0.138    | -0.539   | -0.030   | -0.2407  | 0.1790   | -0.0328  |
| 270                                   | -4.127   | -0.300   | 0.498    | -1.265   | 0.192    | -0.115   | -0.0791  | -0.1240  | -0.0125  |
| 271                                   | -0.151   | -1.398   | -0.879   | 0.312    | -0.782   | -0.428   | 0.3956   | 0.0168   | -0.0093  |
| 272                                   | -3.347   | 0.623    | -0.205   | 0.243    | 0.595    | -0.219   | -0.0155  | 0.0485   | -0.0491  |
| 273                                   | -0.936   | -1.259   | -1.241   | 0.310    | -1.226   | -0.840   | 0.3016   | 0.2103   | -0.1812  |
| 274                                   | -4.241   | -0.102   | 0.633    | -1.085   | 0.337    | 0.051    | -0.1126  | -0.0139  | 0.0045   |
| 275                                   | 0.521    | 0.694    | -0.595   | 0.047    | -0.749   | -0.391   | -0.4347  | -0.0884  | -0.0511  |
| 276                                   | -4.794   | 0.322    | 0.994    | -1.352   | 0.189    | 0.241    | 0.0836   | 0.1405   | -0.0464  |
| 277                                   | -4.758   | 0.330    | 0.919    | -1.188   | 0.174    | 0.170    | 0.1328   | 0.1528   | -0.0639  |
| 278                                   | 1.605    | 1.499    | 1.591    | 0.518    | -0.255   | 0.086    | 0.2694   | 0.2899   | 0.0819   |
| 279                                   | -3.976   | -0.176   | 0.854    | -0.349   | 0.673    | 0.576    | -0.0931  | 0.2011   | 0.1164   |
| 280                                   | -1.708   | 0.717    | -0.743   | 0.811    | 0.908    | 0.387    | -0.2104  | -0.1047  | 0.1027   |
| 281                                   | -1.827   | 0.741    | -0.769   | 0.859    | 0.569    | 0.297    | -0.2954  | -0.0237  | 0.0367   |
| 282                                   | -1.900   | 0.801    | -1.043   | 0.546    | 0.440    | -0.223   | -0.1346  | -0.1514  | -0.0178  |
| 283                                   | 1.464    | -0.069   | -1.744   | -1.127   | -0.178   | -0.384   | 1.0795   | 0.2379   | 0.1532   |
| 284                                   | 2.218    | 1.088    | 1.234    | 0.079    | -0.128   | -0.285   | 0.1729   | 0.0499   | 0.0827   |
| 285                                   | -2.784   | 0.061    | -0.578   | 1.060    | 0.606    | -0.441   | 0.0938   | 0.0154   | -0.0447  |
| 286                                   | 2.410    | 0.352    | 0.522    | -0.243   | -0.087   | -0.576   | -0.1899  | -0.0190  | 0.0174   |
| 287                                   | 0.248    | 1.244    | 0.942    | 0.833    | -0.752   | 0.075    | 0.1347   | 0.1112   | 0.0012   |
| 288                                   | 1.965    | -0.573   | 0.764    | 0.383    | -0.027   | -0.145   | -0.4405  | -0.0498  | -0.0883  |
| 289                                   | -2.156   | -0.195   | 0.057    | 1.356    | -0.378   | -0.103   | 0.3664   | 0.1325   | -0.0705  |
| 290                                   | -0.657   | -1.386   | -0.074   | 0.843    | 0.300    | -0.519   | -0.1318  | -0.1283  | 0.0667   |
| 291                                   | 1.068    | -0.374   | -1.138   | -0.361   | -0.322   | -0.236   | 0.1141   | 0.1229   | 0.0471   |
| 292                                   | -0.225   | -0.451   | -0.237   | 0.544    | 0.803    | -0.114   | -0.1242  | -0.3283  | 0.1347   |
| 293                                   | 2.387    | -0.082   | -0.054   | -0.424   | 0.058    | -0.366   | -0.0115  | 0.0067   | 0.0442   |
| 294                                   | -4.699   | 0.186    | 1.024    | -1.258   | 0.261    | 0.325    | 0.0384   | 0.1482   | -0.0070  |
| 295                                   | 2.906    | -1.398   | -0.755   | -0.575   | 0.827    | 0.590    | 0.2288   | 0.2870   | -0.1587  |
| 296                                   | 1.515    | -0.125   | -0.247   | -0.073   | -0.242   | -0.257   | -0.2044  | -0.0742  | 0.0239   |
| 297                                   | 3.158    | 0.976    | -0.726   | -1.023   | 0.513    | 0.214    | -0.2021  | -0.0221  | -0.0292  |
| 298                                   | -3.547   | -0.876   | 0.972    | 0.190    | 0.374    | 0.735    | 0.1735   | 0.2154   | 0.1563   |
| 299                                   | 2.970    | -0.530   | 1.012    | -0.015   | 0.390    | -0.098   | 0.0887   | -0.1234  | -0.0791  |
| 300                                   | -1.439   | -0.336   | -0.375   | 1.049    | 0.045    | 0.209    | 0.0613   | -0.0959  | 0.0378   |
| 301                                   | 1.436    | -0.327   | -0.009   | 0.227    | -0.169   | 0.014    | -0.3652  | -0.1411  | -0.0123  |
| 302                                   | 3.028    | -0.939   | 0.702    | -0.083   | 0.536    | 0.080    | 0.1299   | -0.1525  | -0.1177  |
| 303                                   | 0.593    | 0.465    | 0.245    | 0.662    | -0.408   | 0.449    | -0.1214  | -0.2133  | 0.0409   |
| 304                                   | 3.619    | -0.899   | 1.032    | -0.186   | 0.876    | 0.373    | 0.6444   | -0.3815  | -0.1552  |
| 305                                   | 3.018    | -1.091   | 0.764    | 0.019    | 0.561    | 0.125    | -0.0594  | -0.0955  | -0.2153  |
| 306                                   | 0.996    | -4.278   | 0.550    | 1.293    | 0.141    | 0.325    | 0.0113   | 0.1297   | 0.0696   |
| 307                                   | 0.389    | -3.370   | 0.273    | 1.106    | -0.395   | -0.266   | -0.0902  | 0.2199   | 0.0548   |
| 308                                   | -0.513   | 0.061    | 0.582    | 1.180    | -0.776   | 0.438    | 0.5601   | -0.0110  | 0.0334   |
| 309                                   | 1.715    | 0.742    | 0.989    | 0.265    | -0.301   | -0.294   | -0.0159  | -0.0726  | 0.0495   |
| 310                                   | 2.350    | -0.882   | 0.721    | 0.269    | 0.211    | -0.015   | -0.3555  | -0.0617  | -0.1386  |

*Continued*

**Table I.4.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 311                                   | -0.202   | -0.022   | -0.337   | 0.891    | -0.535   | 0.742    | -0.2600  | -0.1227  | 0.0013   |
| 312                                   | 2.998    | -0.936   | 0.966    | 0.055    | 0.500    | 0.051    | 0.0952   | -0.1527  | -0.1324  |
| 313                                   | 0.335    | 0.353    | 0.293    | 0.791    | -0.466   | 0.514    | 0.0489   | -0.1897  | 0.0524   |
| 314                                   | 2.822    | 0.123    | 1.250    | 0.151    | 0.336    | 0.093    | -0.0804  | -0.0803  | -0.1226  |
| 315                                   | 3.347    | 1.352    | 1.111    | -0.352   | 0.495    | 0.234    | 0.2993   | -0.1665  | 0.0024   |
| 316                                   | 2.452    | 0.363    | 1.487    | 0.476    | 0.290    | 0.415    | -0.0900  | -0.0086  | -0.1303  |
| 317                                   | -2.242   | -1.553   | 0.773    | -1.987   | -1.469   | -0.154   | -0.3476  | -0.1116  | -0.0326  |
| 318                                   | 0.708    | -0.191   | 0.226    | 0.734    | -0.305   | 0.455    | -0.2439  | -0.2182  | 0.0134   |
| 319                                   | -1.074   | -0.335   | -0.568   | 0.440    | 0.347    | -0.935   | -0.1988  | -0.1270  | -0.0105  |
| 320                                   | 2.092    | -0.652   | 0.661    | 0.259    | 0.016    | -0.199   | -0.3656  | -0.0390  | -0.0755  |
| 321                                   | 1.471    | 0.035    | -0.423   | -0.248   | -0.332   | -0.447   | -0.1027  | -0.0150  | 0.0341   |
| 322                                   | 0.377    | 0.476    | 0.777    | 0.667    | -0.376   | -0.418   | -0.0593  | -0.0679  | 0.0128   |
| 323                                   | 2.277    | -0.612   | 0.874    | 0.225    | 0.048    | -0.285   | -0.2248  | -0.0354  | -0.0560  |
| 324                                   | 2.023    | -0.314   | 0.674    | 0.156    | -0.121   | -0.407   | -0.2397  | -0.0440  | -0.0171  |
| 325                                   | 1.268    | 0.068    | 0.922    | 0.652    | -0.269   | 0.091    | -0.0720  | -0.1412  | 0.0266   |
| 326                                   | 2.753    | -0.992   | 0.818    | 0.217    | 0.488    | 0.259    | -0.2120  | -0.1626  | -0.2360  |
| 327                                   | 1.015    | -0.116   | 0.094    | 0.472    | -0.305   | 0.160    | -0.3943  | -0.1906  | -0.0088  |
| 328                                   | 2.915    | -0.424   | -0.183   | -0.543   | 0.490    | 0.092    | 0.0913   | 0.0007   | -0.0387  |
| 329                                   | 1.309    | 0.247    | -0.219   | 0.080    | -0.253   | 0.046    | -0.2404  | -0.2414  | 0.0391   |
| 330                                   | 2.719    | 0.425    | 1.742    | 0.394    | 0.398    | 0.405    | 0.2638   | 0.1444   | -0.0858  |
| 331                                   | -1.772   | -1.599   | 0.956    | -1.614   | -1.569   | -0.015   | 0.1866   | -0.2698  | 0.0305   |
| 332                                   | 1.418    | -0.792   | 0.057    | 0.376    | -0.076   | 0.166    | -0.3287  | -0.1484  | -0.0248  |
| 333                                   | 1.916    | -0.345   | 0.626    | 0.178    | -0.163   | -0.418   | -0.2368  | -0.0480  | -0.0120  |
| 334                                   | 1.473    | -4.284   | 0.606    | 0.922    | 0.192    | -0.078   | 0.3516   | 0.2918   | 0.1234   |
| 335                                   | 0.599    | -0.170   | 0.205    | 0.706    | -0.389   | 0.343    | -0.1186  | -0.2297  | 0.0317   |
| 336                                   | 2.591    | -0.074   | -0.281   | -0.550   | 0.246    | -0.116   | 0.0008   | 0.0091   | 0.0290   |
| 337                                   | 2.822    | 0.123    | 1.250    | 0.151    | 0.336    | 0.093    | -0.0804  | -0.0803  | -0.1226  |
| 338                                   | 2.805    | -0.435   | 1.003    | 0.030    | 0.287    | -0.168   | 0.0081   | -0.0967  | -0.0618  |
| 339                                   | 2.597    | -0.918   | 0.684    | 0.131    | 0.315    | -0.025   | -0.2802  | -0.0405  | -0.1560  |
| 340                                   | 2.452    | -0.897   | 0.761    | 0.217    | 0.228    | -0.082   | -0.3093  | -0.0381  | -0.1336  |
| 341                                   | 1.505    | -0.863   | 0.117    | 0.360    | 0.070    | 0.434    | 0.2363   | -0.3970  | 0.0892   |
| 342                                   | 0.864    | 0.977    | 1.061    | 0.687    | -0.523   | 0.026    | 0.0648   | 0.0255   | 0.0374   |
| 343                                   | 2.342    | -0.881   | 0.722    | 0.273    | 0.205    | -0.020   | -0.3709  | -0.0557  | -0.1416  |
| 344                                   | 2.980    | 0.251    | 0.696    | -0.265   | 0.331    | -0.084   | 0.0086   | -0.1964  | -0.0309  |
| 345                                   | 2.489    | 0.275    | 0.546    | -0.234   | -0.020   | -0.499   | -0.1593  | -0.0418  | 0.0144   |
| 346                                   | 2.428    | 0.662    | 0.102    | -0.485   | -0.073   | -0.524   | -0.1850  | -0.0422  | 0.0497   |
| 347                                   | 3.649    | 0.814    | -0.798   | -1.275   | 0.836    | 0.458    | 0.3482   | -0.1356  | -0.0074  |
| 348                                   | 3.120    | 0.980    | -0.724   | -1.000   | 0.488    | 0.190    | -0.2739  | 0.0056   | -0.0431  |
| 349                                   | 2.901    | 0.849    | -1.402   | -1.221   | 0.501    | 0.292    | -0.2011  | 0.2872   | 0.0118   |
| 350                                   | -1.692   | 0.545    | -0.848   | 0.761    | 0.627    | 0.202    | -0.2568  | -0.1110  | 0.0537   |
| 351                                   | 1.573    | 0.526    | -0.748   | -0.494   | -0.340   | -0.488   | -0.3427  | 0.1207   | 0.0159   |
| 352                                   | 0.566    | 1.288    | 1.336    | 0.771    | -0.762   | -0.251   | 0.1760   | 0.2608   | -0.0096  |
| 353                                   | -2.116   | 0.159    | 0.072    | -0.313   | -0.761   | 0.520    | 0.1814   | -0.1343  | -0.0045  |
| 354                                   | 3.397    | 0.539    | 0.192    | -0.698   | 0.558    | 0.082    | 0.0998   | -0.2366  | -0.0458  |

*Continued*

**Table I.4.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 355                                   | 2.988    | 0.407    | -0.604   | -0.941   | 0.424    | 0.005    | 0.1486   | 0.0214   | 0.0682   |
| 356                                   | 2.616    | 0.272    | 0.586    | -0.294   | 0.038    | -0.483   | 0.0130   | -0.0861  | 0.0454   |
| 357                                   | 1.562    | -0.151   | -1.330   | -0.677   | -0.088   | -0.117   | 0.1923   | 0.2087   | 0.0900   |
| 358                                   | 3.537    | 0.093    | 0.458    | -0.537   | 0.716    | 0.250    | 0.2333   | -0.3063  | -0.1409  |
| 359                                   | -3.643   | 0.491    | 0.936    | -0.549   | 0.609    | 0.407    | -0.1114  | 0.1437   | 0.0856   |
| 360                                   | 1.748    | 0.435    | -0.736   | -0.540   | -0.265   | -0.500   | -0.4219  | 0.2203   | 0.0024   |
| 361                                   | -2.258   | 0.800    | -0.613   | 0.976    | 0.526    | 0.203    | 0.0451   | 0.0439   | 0.0137   |
| 362                                   | 0.871    | 0.545    | -1.254   | -0.423   | -0.523   | -0.308   | -0.2267  | 0.0509   | 0.0040   |
| 363                                   | 0.574    | -0.237   | -1.565   | -0.381   | -0.484   | -0.185   | 0.1392   | 0.1456   | 0.0167   |
| 364                                   | -1.035   | 1.014    | -1.006   | 0.714    | -0.841   | 0.896    | 0.0692   | -0.0504  | -0.0301  |
| 365                                   | -1.538   | 0.292    | -0.693   | 0.891    | -0.983   | 0.776    | 1.2818   | -0.1595  | -0.0098  |
| 366                                   | 0.993    | -0.630   | -1.459   | -0.379   | -0.181   | 0.096    | 0.2695   | 0.1116   | 0.0853   |
| 367                                   | 0.976    | 0.518    | -1.182   | -0.475   | -0.551   | -0.499   | -0.3140  | 0.1723   | -0.0207  |
| 368                                   | -4.313   | 0.125    | 0.684    | -1.581   | -0.093   | 0.170    | -0.0191  | -0.0583  | -0.0496  |
| 369                                   | -3.516   | 0.955    | 0.337    | 0.181    | 0.636    | 0.017    | 0.0699   | 0.1987   | -0.0219  |
| 370                                   | 2.485    | 0.354    | 0.566    | -0.273   | -0.064   | -0.592   | -0.1154  | -0.0255  | 0.0295   |
| 371                                   | -1.928   | -1.165   | 0.827    | -1.681   | -1.734   | -0.206   | 0.0048   | -0.2027  | -0.0698  |
| 372                                   | -1.867   | -0.888   | -0.630   | 1.024    | 0.631    | -0.086   | -0.0472  | -0.1264  | 0.0764   |
| 373                                   | 3.245    | 0.291    | -0.549   | -0.915   | 0.635    | 0.260    | 0.0723   | -0.0140  | -0.0539  |
| 374                                   | 2.901    | 0.849    | -1.402   | -1.221   | 0.501    | 0.292    | -0.2011  | 0.2872   | 0.0118   |
| 375                                   | 3.622    | 0.594    | -0.734   | -1.203   | 0.851    | 0.471    | 0.3742   | -0.1294  | -0.0289  |
| 376                                   | -4.140   | 0.594    | 0.575    | -0.517   | 0.527    | 0.240    | -0.0049  | 0.1856   | -0.0060  |
| 377                                   | 3.579    | 0.084    | -0.504   | -1.005   | 0.880    | 0.482    | 0.4344   | -0.1417  | -0.0757  |
| 378                                   | 2.991    | 0.491    | 0.585    | -0.409   | 0.247    | -0.265   | -0.0244  | -0.1363  | 0.0065   |
| 379                                   | 2.394    | 0.698    | -0.926   | -0.910   | 0.082    | -0.230   | -0.1588  | 0.1772   | 0.0760   |
| 380                                   | 2.109    | 0.332    | 0.098    | -0.266   | -0.157   | -0.490   | -0.3387  | -0.0025  | 0.0055   |
| 381                                   | -2.511   | 0.328    | -0.752   | 0.856    | 0.880    | -0.465   | -0.1882  | -0.0542  | -0.0133  |
| 382                                   | 1.228    | 1.565    | 1.523    | 0.650    | -0.478   | -0.085   | -0.1004  | 0.3938   | 0.0100   |
| 383                                   | 1.012    | 1.506    | 1.427    | 0.703    | -0.553   | -0.077   | -0.0832  | 0.3297   | 0.0068   |
| 384                                   | 1.338    | 0.310    | -0.661   | -0.318   | -0.407   | -0.461   | -0.3054  | 0.0609   | 0.0057   |
| 385                                   | 0.583    | 1.287    | 1.334    | 0.760    | -0.751   | -0.240   | 0.2085   | 0.2483   | -0.0033  |
| 386                                   | 3.098    | 0.765    | 0.157    | -0.609   | 0.361    | -0.047   | -0.1722  | -0.1731  | -0.0321  |
| 387                                   | -0.860   | 0.670    | -0.904   | 0.789    | -0.674   | 1.089    | 0.1658   | -0.0995  | 0.0259   |
| 388                                   | -1.409   | -0.283   | -0.783   | 0.883    | 0.642    | 0.247    | -0.4549  | -0.1049  | 0.0566   |
| 389                                   | 1.248    | -4.261   | 0.381    | 1.007    | 0.216    | 0.211    | 0.2891   | 0.1998   | 0.1159   |
| 390                                   | 2.090    | -0.624   | 0.728    | 0.288    | 0.008    | -0.204   | -0.3664  | -0.0413  | -0.0765  |
| 391                                   | -0.273   | -2.797   | 0.388    | 0.326    | -0.824   | -0.389   | -0.1571  | 0.1636   | 0.0448   |
| 392                                   | 0.484    | -4.120   | 0.801    | 0.816    | -0.085   | 0.503    | -0.1483  | 0.0350   | 0.1168   |
| 393                                   | -4.476   | 0.453    | 0.729    | -0.862   | 0.286    | 0.159    | 0.2031   | 0.1451   | -0.0493  |
| 394                                   | 1.236    | -0.479   | -1.243   | -0.267   | -0.016   | 0.385    | 0.1361   | -0.0791  | 0.0957   |
| 395                                   | 3.341    | 0.060    | -0.045   | -0.763   | 0.612    | 0.110    | 0.3497   | -0.1748  | 0.0115   |
| 396                                   | 1.357    | 0.628    | -1.215   | -0.601   | -0.326   | -0.267   | -0.2522  | 0.1075   | 0.0403   |
| 397                                   | 3.285    | -0.052   | -0.079   | -0.724   | 0.624    | 0.167    | 0.3591   | -0.1833  | 0.0062   |
| 398                                   | 3.047    | -1.130   | -0.844   | -0.743   | 0.863    | 0.592    | 0.3631   | 0.2512   | -0.1149  |

*Continued*

**Table I.4.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 399                                   | 2.798    | -0.110   | -0.190   | -0.556   | 0.364    | -0.021   | -0.0050  | -0.0148  | -0.0088  |
| 400                                   | 2.358    | 0.450    | -0.373   | -0.671   | -0.034   | -0.484   | -0.0989  | 0.0883   | 0.0623   |
| 401                                   | 3.023    | 0.062    | -0.157   | -0.619   | 0.468    | 0.065    | -0.0849  | -0.0304  | -0.0687  |
| 402                                   | 3.297    | -0.290   | -0.229   | -0.718   | 0.720    | 0.313    | 0.2985   | -0.1084  | -0.0685  |
| 403                                   | 3.204    | 1.322    | 1.116    | -0.314   | 0.396    | 0.119    | 0.2649   | -0.1231  | 0.0348   |
| 404                                   | 0.862    | 1.451    | 1.398    | 0.738    | -0.626   | -0.132   | -0.0650  | 0.3244   | -0.0037  |
| 405                                   | -0.268   | 1.242    | 0.145    | 0.942    | -0.685   | 0.728    | -0.2690  | 0.0868   | -0.0141  |
| 406                                   | -2.381   | 1.061    | 0.580    | 1.183    | 0.918    | -0.507   | 0.3663   | 0.1703   | 0.0175   |
| 407                                   | 0.882    | 0.984    | 1.100    | 0.531    | -0.707   | -0.481   | 0.1013   | 0.0803   | 0.0010   |
| 408                                   | -0.417   | 0.274    | -1.317   | 0.344    | -0.709   | 0.462    | -0.1355  | -0.1769  | -0.0167  |
| 409                                   | 2.320    | 0.791    | -1.378   | -0.991   | 0.207    | 0.143    | -0.2163  | 0.1807   | 0.0771   |

**Table I.5.** Factor scores, based on correlations (BritishPredSpecies).

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 1                                     | 1.314    | 1.403    | 1.443    | -0.200   | 0.705    | 0.551    | -0.935   | 0.892    | -2.443   |
| 2                                     | -1.074   | 0.929    | -0.755   | 1.219    | 1.234    | -0.241   | -0.373   | 0.529    | -0.492   |
| 3                                     | 0.222    | 1.045    | 0.818    | 0.876    | -1.149   | 0.244    | -0.120   | -0.124   | 0.298    |
| 4                                     | -0.826   | 0.491    | -0.562   | 1.106    | 0.322    | -0.467   | 0.972    | -0.591   | -0.387   |
| 5                                     | -0.331   | 0.511    | -1.267   | 0.824    | -1.392   | 1.869    | -0.283   | -0.791   | -0.323   |
| 6                                     | 0.132    | -0.031   | -1.710   | -0.382   | -1.207   | -0.835   | -0.005   | 0.799    | -0.555   |
| 7                                     | 1.225    | 0.640    | -0.965   | -1.344   | 0.731    | 0.170    | -0.421   | 0.606    | 0.494    |
| 8                                     | -1.357   | -0.903   | 0.871    | -1.282   | 0.669    | -0.643   | -0.715   | -1.395   | 1.611    |
| 9                                     | -0.220   | -2.121   | 0.144    | 0.227    | -1.551   | -0.291   | -1.285   | 0.800    | 0.276    |
| 10                                    | 0.763    | 0.240    | -0.871   | -0.664   | -0.224   | -0.632   | -1.232   | 0.806    | 0.328    |
| 11                                    | -1.700   | 0.310    | 0.886    | -1.076   | 0.641    | 1.345    | -0.076   | 0.975    | 0.664    |
| 12                                    | -0.009   | 1.293    | 0.075    | 1.022    | -1.001   | 2.150    | -0.316   | -0.163   | 0.683    |
| 13                                    | 0.188    | 0.729    | -1.277   | -0.036   | -0.985   | 0.491    | -1.415   | -1.239   | 0.243    |
| 14                                    | -1.684   | -0.085   | 0.480    | -0.900   | 0.492    | -0.180   | 0.704    | -0.212   | -0.281   |
| 15                                    | -0.914   | -0.350   | -0.534   | 1.380    | 1.548    | -0.522   | 0.195    | -0.692   | 1.086    |
| 16                                    | -1.759   | -0.076   | 0.780    | -1.597   | 0.652    | 0.344    | -0.622   | -0.169   | 0.369    |
| 17                                    | 0.992    | 0.681    | -1.580   | -1.353   | 0.446    | 0.446    | -0.390   | 0.857    | 1.448    |
| 18                                    | -1.404   | -0.035   | 0.211    | -1.010   | -0.388   | 0.546    | -1.114   | -0.160   | -0.516   |
| 19                                    | -0.188   | -0.995   | 0.196    | 0.819    | -2.099   | -2.408   | 3.904    | -1.577   | -0.649   |
| 20                                    | -0.930   | 0.680    | -0.927   | 1.019    | 0.786    | -0.233   | 0.356    | -0.443   | -0.306   |
| 21                                    | 0.560    | 0.098    | 0.882    | 0.609    | -0.588   | -0.339   | -0.044   | -1.118   | 0.622    |
| 22                                    | 0.440    | -0.189   | -0.034   | 0.593    | -0.345   | 0.928    | -0.930   | -1.704   | 0.305    |
| 23                                    | 1.012    | -0.425   | 1.014    | 0.200    | 0.197    | -0.626   | -0.691   | -0.343   | -0.834   |

*Continued*

**Table I.5.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 24                                    | -0.700   | 0.323    | -1.055   | 0.901    | 0.827    | 0.086    | -0.475   | -0.979   | 0.483    |
| 25                                    | -0.137   | -3.428   | 1.457    | -0.334   | -0.910   | 1.641    | -2.236   | 0.261    | 2.222    |
| 26                                    | 0.003    | 0.035    | -1.263   | 0.572    | -0.471   | 2.866    | 1.380    | -2.599   | 2.040    |
| 27                                    | -0.264   | 0.516    | 0.057    | 0.741    | 0.684    | -0.931   | 0.440    | -1.766   | 1.242    |
| 28                                    | -1.623   | 0.104    | 0.528    | -1.204   | 0.507    | 0.425    | -0.533   | -0.066   | 0.119    |
| 29                                    | 0.147    | 1.041    | 0.844    | 0.907    | -0.890   | -0.111   | -0.413   | 0.028    | 0.206    |
| 30                                    | -0.823   | 0.120    | -0.986   | 0.979    | 0.809    | -0.479   | 0.170    | -0.964   | 0.143    |
| 31                                    | -0.144   | 0.270    | -1.244   | 0.795    | -0.867   | 2.536    | -0.648   | -1.241   | 0.522    |
| 32                                    | 0.926    | -0.567   | 0.808    | 0.263    | 0.133    | -0.460   | -0.732   | -0.547   | -0.648   |
| 33                                    | 0.083    | 0.112    | -1.725   | -0.288   | -1.312   | -0.767   | -0.829   | 0.852    | -0.965   |
| 34                                    | 0.679    | 0.033    | -0.672   | -0.705   | -0.613   | -1.718   | 0.617    | 0.724    | 0.792    |
| 35                                    | -0.634   | 0.831    | 0.965    | 1.225    | 1.018    | -2.442   | 0.794    | 0.300    | -0.127   |
| 36                                    | 1.142    | 0.263    | 0.716    | -0.429   | 0.169    | -1.122   | 0.113    | -0.551   | 0.605    |
| 37                                    | 0.584    | -0.838   | -1.543   | -0.443   | 0.244    | 1.086    | 1.037    | 0.461    | 1.473    |
| 38                                    | -0.449   | 0.830    | -0.916   | 1.158    | -1.347   | 2.881    | 0.984    | 0.016    | 0.162    |
| 39                                    | 0.243    | -0.184   | -1.825   | -0.613   | -0.944   | -0.774   | 0.855    | 1.209    | 0.117    |
| 40                                    | -0.955   | 1.004    | -0.450   | 1.159    | 1.391    | -0.510   | -0.139   | 0.135    | 0.010    |
| 41                                    | 0.935    | 0.510    | -0.919   | -1.049   | 0.051    | -0.545   | 0.065    | 0.161    | 1.545    |
| 42                                    | -1.499   | 0.258    | -0.108   | 0.358    | 1.060    | -0.889   | 0.548    | 0.271    | -0.862   |
| 43                                    | -1.238   | 0.723    | -0.664   | 1.281    | 1.581    | -1.017   | 0.336    | 0.417    | -0.775   |
| 44                                    | 0.948    | 0.388    | -0.888   | -1.056   | 0.025    | -0.832   | -0.240   | 1.014    | 1.108    |
| 45                                    | -1.232   | 0.614    | -0.676   | 1.313    | 0.853    | -0.973   | 1.035    | 0.460    | -1.480   |
| 46                                    | 0.262    | 0.719    | -0.125   | 0.491    | -0.774   | 1.011    | 0.292    | -2.133   | 1.269    |
| 47                                    | 1.097    | 0.331    | 0.690    | -0.420   | 0.014    | -1.358   | -0.188   | -0.286   | 0.548    |
| 48                                    | -1.792   | 0.188    | 0.478    | -1.261   | 0.339    | -0.520   | 0.190    | -0.060   | -1.361   |
| 49                                    | -0.913   | -0.256   | 0.068    | -1.332   | -2.739   | 1.425    | 0.503    | -1.249   | -0.957   |
| 50                                    | -0.824   | -0.508   | -0.621   | -1.239   | -2.799   | 0.123    | 0.074    | -0.829   | -2.110   |
| 51                                    | 0.859    | -0.548   | 0.770    | 0.379    | 0.033    | -0.378   | -1.316   | -0.419   | -1.030   |
| 52                                    | 0.912    | 0.299    | 0.277    | -0.384   | -0.145   | -0.897   | 0.805    | -1.563   | 1.625    |
| 53                                    | 0.436    | 0.454    | -1.460   | -0.695   | -0.836   | -0.870   | -0.742   | 0.713    | 0.213    |
| 54                                    | 1.300    | 0.849    | -0.827   | -1.318   | 0.880    | 0.469    | -1.038   | 0.035    | -0.630   |
| 55                                    | -0.197   | 0.042    | -1.612   | 0.319    | -1.582   | 0.005    | -1.205   | -0.036   | -1.421   |
| 56                                    | 0.358    | 1.280    | 1.548    | 0.988    | -1.093   | -0.165   | -0.488   | 1.931    | -0.072   |
| 57                                    | -1.963   | 0.303    | 1.081    | -1.683   | 0.354    | 0.624    | 0.429    | 0.848    | -0.615   |
| 58                                    | 0.890    | 0.451    | -0.311   | -0.662   | -0.194   | -0.976   | -0.383   | -0.410   | 1.025    |
| 59                                    | 0.264    | 1.073    | 0.878    | 0.849    | -1.086   | 0.246    | -0.122   | -0.108   | 0.400    |
| 60                                    | 0.859    | 0.353    | -0.483   | -0.742   | -0.317   | -1.386   | -0.906   | 0.847    | 0.475    |
| 61                                    | -1.719   | 0.231    | 0.289    | -0.857   | 0.429    | -0.716   | 0.792    | -0.144   | -1.427   |
| 62                                    | -0.897   | 0.631    | -0.867   | 1.109    | 1.226    | 0.021    | -0.638   | -0.218   | 0.246    |
| 63                                    | 1.104    | 0.317    | -0.297   | -0.857   | 0.275    | -0.738   | -0.689   | 0.440    | 0.308    |
| 64                                    | 0.907    | -0.140   | -0.248   | -0.405   | 0.100    | -0.444   | -0.803   | 0.079    | 0.056    |
| 65                                    | 0.346    | -1.123   | -1.324   | 0.267    | -0.129   | 1.175    | -1.772   | 1.187    | -0.646   |
| 66                                    | -1.582   | 0.715    | 0.368    | -0.214   | 0.994    | 0.575    | 0.220    | 1.174    | -0.164   |

*Continued*

**Table I.5.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 67                                    | 0.067    | -0.589   | -1.542   | 0.150    | -1.058   | -0.170   | -1.629   | 1.429    | -0.930   |
| 68                                    | 0.614    | -3.914   | 0.963    | 1.653    | 0.627    | 0.833    | 0.451    | 0.749    | 0.658    |
| 69                                    | -1.051   | -0.422   | -0.900   | 1.097    | 1.373    | -2.105   | -0.252   | -0.615   | -0.398   |
| 70                                    | -0.031   | -1.033   | -1.346   | 0.464    | -1.102   | -0.006   | -0.761   | 0.842    | -0.510   |
| 71                                    | -0.886   | -1.702   | 0.390    | -1.400   | -1.415   | -0.356   | -1.128   | -0.479   | 0.655    |
| 72                                    | 0.485    | 0.063    | 1.031    | 1.028    | -0.389   | 0.832    | -0.683   | -0.800   | 0.051    |
| 73                                    | 0.846    | -3.888   | 1.522    | 1.553    | 0.834    | 0.279    | 0.590    | 0.986    | -0.173   |
| 74                                    | 1.150    | 1.278    | 1.338    | -0.154   | 0.325    | 0.148    | 0.464    | -0.183   | 0.898    |
| 75                                    | -0.772   | 1.120    | -0.735   | 1.096    | 1.057    | 0.923    | -0.609   | 0.109    | 0.710    |
| 76                                    | 1.121    | 0.828    | 1.197    | -0.320   | 0.155    | -0.630   | 2.139    | -1.178   | 2.419    |
| 77                                    | 0.518    | 1.352    | 1.698    | 0.833    | -0.807   | -0.056   | -0.062   | 2.072    | 0.423    |
| 78                                    | 1.086    | 0.333    | 0.692    | -0.400   | -0.017   | -1.398   | -0.375   | -0.167   | 0.408    |
| 79                                    | 0.933    | 0.194    | -0.689   | -0.812   | 0.116    | -0.460   | -0.207   | 0.235    | 0.956    |
| 80                                    | 0.315    | 1.189    | 1.400    | 0.934    | -1.070   | 0.062    | 0.845    | 0.891    | 0.643    |
| 81                                    | -0.412   | 1.232    | -0.431   | 1.122    | -0.447   | 1.679    | -0.989   | 0.356    | 0.134    |
| 82                                    | 0.673    | 0.374    | -0.916   | -0.650   | -0.468   | -0.863   | -1.032   | 0.507    | 0.490    |
| 83                                    | -1.925   | 0.109    | 1.127    | -1.444   | 0.472    | 0.809    | 0.130    | 1.045    | -0.044   |
| 84                                    | 0.234    | 0.249    | -1.360   | 0.021    | -0.656   | 1.016    | -0.938   | -1.272   | 0.632    |
| 85                                    | 0.264    | -0.748   | -1.266   | 0.087    | -0.595   | 0.257    | -0.464   | 0.409    | 0.266    |
| 86                                    | -1.795   | 0.056    | 0.681    | -1.673   | 0.034    | 0.051    | 0.030    | -0.177   | -0.885   |
| 87                                    | -1.949   | 0.325    | 1.009    | -1.502   | 0.418    | 0.476    | 0.485    | 0.915    | -0.741   |
| 88                                    | 0.493    | -0.625   | -0.034   | 0.578    | -0.376   | 0.188    | -2.183   | -0.313   | -0.934   |
| 89                                    | 0.048    | 0.838    | -0.267   | 0.553    | -1.376   | 0.166    | -0.310   | -1.322   | -0.095   |
| 90                                    | 0.705    | 0.506    | -0.813   | -0.794   | -0.630   | -1.556   | -0.879   | 0.957    | 0.403    |
| 91                                    | -0.333   | 0.817    | 0.132    | 1.058    | 0.334    | -0.022   | -0.766   | -0.473   | 0.566    |
| 92                                    | -1.992   | 0.044    | 1.235    | -1.657   | 0.427    | 0.757    | 0.198    | 0.982    | -0.096   |
| 93                                    | -1.914   | 0.360    | 0.876    | -1.185   | 0.494    | 0.260    | 0.686    | 0.989    | -0.931   |
| 94                                    | 0.686    | -0.161   | 0.853    | 0.539    | -0.335   | -0.350   | -0.810   | -0.893   | -0.026   |
| 95                                    | 0.030    | -0.376   | -1.777   | -0.911   | -1.702   | -2.645   | 5.433    | 0.331    | -1.342   |
| 96                                    | -1.371   | 0.567    | -0.667   | 1.335    | 0.694    | -1.673   | 1.468    | 0.593    | -2.546   |
| 97                                    | 0.668    | -1.290   | -1.397   | -0.420   | 0.340    | 0.533    | 0.066    | 2.968    | 0.172    |
| 98                                    | 0.700    | 1.119    | 1.342    | 0.356    | -0.730   | -0.990   | -0.615   | 0.939    | 0.350    |
| 99                                    | 0.607    | -3.987   | 0.809    | 1.654    | 0.770    | 1.292    | 0.651    | 0.501    | 0.667    |
| 100                                   | 0.653    | -0.788   | -1.401   | -0.712   | 0.175    | 0.411    | 3.048    | -0.110   | 2.728    |
| 101                                   | 0.914    | -0.540   | 0.886    | 0.321    | 0.086    | -0.511   | -0.925   | -0.434   | -0.804   |
| 102                                   | -1.086   | -1.451   | 0.470    | -2.266   | -0.324   | -1.540   | -1.406   | -0.627   | 0.816    |
| 103                                   | 0.077    | -1.387   | 1.829    | -1.724   | -1.793   | -1.464   | 0.772    | -0.766   | 1.871    |
| 104                                   | 1.027    | 0.313    | 1.697    | 0.617    | 0.539    | 1.047    | -0.245   | -0.115   | -1.832   |
| 105                                   | 1.477    | 1.070    | 1.229    | -0.537   | 1.140    | 0.868    | 1.325    | -1.597   | -0.909   |
| 106                                   | -1.102   | 0.427    | -1.149   | 0.714    | 1.360    | -2.432   | 0.107    | -0.983   | -1.440   |
| 107                                   | 0.268    | -0.165   | -1.570   | -0.457   | -0.924   | -0.711   | 0.439    | 0.707    | 0.171    |
| 108                                   | -1.369   | -0.431   | 0.491    | -1.707   | -2.305   | 1.639    | 0.684    | -0.655   | -0.865   |
| 109                                   | 0.380    | 1.345    | 1.439    | 1.000    | -0.948   | 0.288    | -1.035   | 1.687    | -0.077   |

*Continued*



**Table I.5.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 110                                   | 0.734    | 1.082    | 1.492    | 0.386    | -0.536   | -0.563   | 0.628    | 0.694    | 1.102    |
| 111                                   | 0.381    | 0.297    | 1.428    | 0.302    | -0.896   | 0.235    | -1.627   | -0.014   | 0.093    |
| 112                                   | -0.349   | 0.699    | 1.153    | 1.168    | -0.919   | -1.879   | 2.733    | 0.300    | -0.863   |
| 113                                   | 0.435    | 1.259    | 1.482    | 0.826    | -0.826   | 0.271    | 1.081    | 0.773    | 1.137    |
| 114                                   | -1.930   | 0.158    | 1.046    | -1.357   | 0.352    | 0.588    | 0.569    | 0.993    | -0.481   |
| 115                                   | -1.936   | 0.333    | 0.973    | -1.419   | 0.415    | 0.436    | 0.556    | 0.931    | -0.796   |
| 116                                   | 1.301    | 0.774    | -1.512   | -1.680   | 1.099    | 0.895    | -0.466   | 1.412    | -0.159   |
| 117                                   | 0.651    | 0.512    | -1.514   | -0.988   | -0.363   | -0.470   | -0.251   | 0.727    | 1.169    |
| 118                                   | 1.260    | 0.765    | -1.606   | -1.643   | 1.057    | 0.972    | -0.795   | 1.627    | -0.383   |
| 119                                   | -0.383   | 0.316    | -1.414   | 0.424    | 0.527    | 0.077    | -1.237   | -1.259   | 0.578    |
| 120                                   | -1.059   | 0.078    | -0.831   | 1.183    | 1.012    | -1.174   | 0.271    | -0.421   | -0.576   |
| 121                                   | -0.006   | -0.729   | -1.524   | 0.127    | -1.247   | -0.570   | -0.282   | 1.086    | -0.735   |
| 122                                   | 0.795    | 1.490    | 1.795    | 0.554    | -0.167   | 0.639    | 0.713    | 1.738    | 1.160    |
| 123                                   | -1.753   | 0.163    | 0.834    | -0.891   | 0.216    | 0.875    | 1.220    | 0.868    | -0.146   |
| 124                                   | -0.367   | 0.471    | -1.258   | 0.844    | -1.487   | 1.701    | -0.136   | -0.736   | -0.528   |
| 125                                   | -1.683   | -0.231   | 0.539    | -1.615   | 0.240    | -0.150   | -0.498   | -0.673   | -0.220   |
| 126                                   | -1.224   | -0.474   | 0.074    | -1.697   | -3.368   | 1.037    | 0.755    | -0.863   | -2.491   |
| 127                                   | 1.266    | 0.572    | -0.933   | -1.330   | 0.883    | 0.413    | -0.371   | 0.458    | -0.005   |
| 128                                   | -1.589   | 0.714    | 0.441    | -0.418   | 1.106    | 0.742    | 0.173    | 1.002    | 0.221    |
| 129                                   | -1.376   | 0.172    | -0.008   | -0.772   | 0.166    | 0.049    | -0.261   | -0.590   | -0.399   |
| 130                                   | 0.316    | 1.228    | 1.507    | 0.994    | -1.161   | -0.216   | -0.062   | 1.679    | 0.028    |
| 131                                   | 1.209    | 0.736    | -1.602   | -1.609   | 0.903    | 0.722    | -0.762   | 1.798    | 0.172    |
| 132                                   | -0.972   | 0.058    | -0.650   | 1.376    | 1.390    | -0.124   | -0.041   | -0.188   | 0.604    |
| 133                                   | 0.033    | 0.672    | -0.288   | 0.654    | -1.301   | 0.416    | -0.478   | -1.247   | -0.055   |
| 134                                   | 1.361    | 0.463    | -0.698   | -1.275   | 1.205    | 0.971    | 0.796    | -1.137   | 0.039    |
| 135                                   | 1.044    | 0.628    | 0.632    | -0.433   | -0.101   | -1.223   | -0.023   | -0.824   | 1.065    |
| 136                                   | 1.392    | 0.837    | -0.759   | -1.464   | 1.048    | 0.484    | -0.005   | -0.372   | 0.081    |
| 137                                   | 0.072    | 0.106    | -1.714   | -0.061   | -0.960   | 0.634    | -0.183   | -0.855   | 0.338    |
| 138                                   | 0.362    | 1.252    | 1.548    | 0.952    | -1.077   | -0.171   | 0.041    | 1.684    | 0.198    |
| 139                                   | -0.874   | 1.077    | -0.585   | 1.117    | 1.410    | 0.148    | -0.429   | 0.072    | 0.528    |
| 140                                   | -0.424   | 1.075    | -0.553   | 1.206    | -1.656   | 1.924    | -0.339   | 0.668    | -0.937   |
| 141                                   | -0.870   | 0.299    | -0.876   | 1.294    | -0.879   | 0.273    | 0.495    | 0.309    | -1.671   |
| 142                                   | -0.817   | -0.525   | -1.057   | 0.905    | 0.994    | -1.739   | -0.727   | -0.573   | -0.216   |
| 143                                   | -0.691   | -1.282   | 0.489    | -0.947   | -1.054   | -1.589   | 0.817    | -1.403   | 0.607    |
| 144                                   | -1.481   | -0.564   | 0.833    | -1.740   | -0.503   | -0.255   | -0.233   | -1.141   | 0.008    |
| 145                                   | 0.744    | 0.263    | -0.680   | -0.571   | -0.356   | -0.901   | -1.315   | 0.632    | 0.230    |
| 146                                   | -1.991   | 0.273    | 1.097    | -1.687   | 0.308    | 0.511    | 0.516    | 0.875    | -0.799   |
| 147                                   | -0.126   | 0.295    | -1.813   | -0.055   | -1.645   | -0.561   | -1.056   | 0.294    | -1.675   |
| 148                                   | 1.243    | 0.532    | -0.391   | -1.117   | 0.591    | -0.340   | -0.068   | -0.119   | 0.702    |
| 149                                   | -1.185   | 0.491    | -0.585   | 1.398    | 1.508    | -0.645   | 0.375    | 0.443    | -0.291   |
| 150                                   | -1.402   | -0.580   | 0.659    | -1.514   | -0.746   | 0.263    | -0.658   | -0.833   | 0.015    |
| 151                                   | 0.772    | -1.560   | -1.280   | -0.363   | 0.624    | 0.712    | -0.662   | 4.045    | -1.153   |
| 152                                   | -1.021   | 0.196    | -0.354   | 1.504    | 1.848    | 0.021    | 0.574    | 0.042    | 1.192    |

*Continued*

**Table I.5.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 153                                   | -1.085   | 0.027    | -0.824   | 1.179    | 0.933    | -1.309   | 0.706    | -0.520   | -0.687   |
| 154                                   | -0.416   | -0.195   | -0.990   | 1.071    | 0.232    | 1.398    | -0.878   | -0.952   | 0.761    |
| 155                                   | -0.443   | -0.895   | -0.943   | 1.031    | 1.325    | 0.129    | -1.713   | -0.712   | 1.057    |
| 156                                   | -1.752   | -0.021   | 0.663    | -1.418   | 0.444    | 0.093    | -0.197   | -0.127   | -0.220   |
| 157                                   | -0.728   | -0.327   | -1.149   | 0.789    | 0.765    | -1.382   | -0.719   | -0.717   | -0.224   |
| 158                                   | -1.692   | -0.419   | 0.611    | -2.216   | -0.167   | -0.145   | -0.558   | -1.183   | -0.250   |
| 159                                   | 0.407    | 0.047    | -0.816   | -0.415   | -1.101   | -1.808   | 0.160    | 0.448    | -0.157   |
| 160                                   | 0.699    | 0.977    | 1.269    | 0.348    | -0.755   | -1.157   | -0.956   | 0.810    | 0.093    |
| 161                                   | 0.929    | 0.232    | -0.636   | -0.884   | -0.019   | -0.906   | 0.124    | 0.434    | 1.199    |
| 162                                   | -1.119   | 0.574    | -0.643   | 1.348    | 1.118    | -0.357   | 0.507    | 0.406    | -0.448   |
| 163                                   | 0.508    | -0.300   | -1.817   | -0.917   | -0.177   | 0.258    | 3.366    | -0.503   | 2.675    |
| 164                                   | -0.982   | 0.371    | -0.914   | 1.049    | 1.377    | -0.886   | -0.408   | -0.536   | -0.104   |
| 165                                   | 1.228    | -1.180   | -1.102   | -0.922   | 1.619    | 1.733    | 1.458    | 1.858    | -1.816   |
| 166                                   | 1.157    | -1.160   | -1.090   | -0.782   | 1.440    | 1.580    | 0.419    | 2.296    | -2.554   |
| 167                                   | -0.265   | 0.053    | -0.265   | 1.045    | -1.431   | 0.255    | 0.840    | -1.020   | -0.370   |
| 168                                   | 0.820    | -1.222   | -1.336   | -0.688   | 0.558    | 0.384    | 0.911    | 3.138    | 0.622    |
| 169                                   | -0.460   | 0.161    | -1.321   | 0.843    | -1.873   | 0.643    | -0.400   | -0.368   | -1.727   |
| 170                                   | 0.851    | 0.221    | 0.446    | 0.031    | -0.078   | -0.239   | -0.856   | -1.304   | 0.201    |
| 171                                   | -0.589   | 0.335    | -0.516   | 1.074    | -0.997   | -0.263   | 0.653    | -0.551   | -1.165   |
| 172                                   | -0.189   | 0.015    | -1.494   | 0.389    | -1.334   | 0.818    | 0.756    | -1.482   | -0.029   |
| 173                                   | -0.090   | 0.721    | -0.004   | 0.637    | 0.557    | -0.664   | -1.264   | -1.393   | 0.902    |
| 174                                   | 0.898    | 0.968    | 1.291    | 0.041    | -0.375   | -1.041   | 0.258    | 0.293    | 1.034    |
| 175                                   | 1.011    | 0.325    | 1.596    | 0.525    | 0.370    | 0.566    | -0.524   | -0.021   | -1.426   |
| 176                                   | 1.389    | 1.079    | 1.306    | -0.417   | 0.907    | 0.594    | 1.181    | -1.022   | -0.106   |
| 177                                   | 0.360    | 0.723    | 0.885    | 0.559    | -1.301   | -1.317   | -0.136   | -0.243   | -0.138   |
| 178                                   | 1.512    | -0.678   | 1.209    | -0.259   | 1.562    | 0.910    | 2.445    | -2.417   | -2.181   |
| 179                                   | -1.284   | -0.348   | -0.142   | -0.831   | -0.780   | -0.310   | 0.112    | -0.923   | -1.044   |
| 180                                   | -2.012   | 0.264    | 1.145    | -1.788   | 0.304    | 0.547    | 0.348    | 0.899    | -0.779   |
| 181                                   | 1.434    | 0.406    | -0.345   | -1.245   | 1.180    | 0.473    | 0.847    | -0.906   | -0.201   |
| 182                                   | 0.761    | 1.061    | 1.263    | 0.205    | -0.643   | -1.096   | -0.211   | 0.481    | 0.689    |
| 183                                   | 1.114    | -0.269   | -0.390   | -0.613   | 0.762    | 0.478    | -0.386   | -0.070   | -0.877   |
| 184                                   | -0.245   | 1.103    | -1.214   | 0.196    | -1.757   | 0.365    | 2.081    | -2.229   | -0.722   |
| 185                                   | -0.813   | 0.816    | -0.741   | 1.270    | 0.867    | 1.147    | -0.608   | 0.394    | 0.498    |
| 186                                   | 1.302    | 1.083    | 1.273    | -0.451   | 0.612    | 0.074    | 1.947    | -1.055   | 1.850    |
| 187                                   | -0.786   | 0.665    | -0.907   | 1.089    | 0.828    | 0.565    | -0.639   | -0.247   | 0.328    |
| 188                                   | 0.331    | 1.272    | 1.450    | 1.004    | -1.080   | 0.034    | -0.461   | 1.604    | 0.021    |
| 189                                   | -1.165   | 0.592    | -0.622   | 1.341    | 1.519    | -0.593   | 0.346    | 0.372    | -0.265   |
| 190                                   | 1.507    | 0.348    | -0.681   | -1.464   | 1.547    | 1.139    | 1.512    | -0.945   | -0.705   |
| 191                                   | -0.888   | -0.468   | -0.965   | 1.022    | 1.160    | -1.571   | -0.450   | -0.723   | -0.009   |
| 192                                   | -0.907   | 0.651    | -0.724   | 1.360    | 0.147    | 0.722    | 0.025    | 0.664    | -0.581   |
| 193                                   | -1.386   | -0.340   | 0.017    | -1.056   | 0.625    | -0.589   | -0.499   | -1.269   | 0.341    |
| 194                                   | 0.805    | 1.359    | 1.662    | 0.429    | -0.343   | -0.113   | -0.011   | 1.739    | 0.715    |
| 195                                   | 1.463    | 0.292    | 0.700    | -0.724   | 1.104    | 0.229    | 1.243    | -1.956   | -0.547   |

*Continued*

**Table I.5.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 196                                   | -0.386   | 1.047    | 1.119    | 1.143    | 1.122    | -1.854   | -0.143   | 0.495    | 0.623    |
| 197                                   | 0.326    | -0.169   | -1.812   | -0.607   | -0.698   | -0.333   | 0.374    | 1.164    | 0.483    |
| 198                                   | -0.692   | -0.313   | -0.865   | 0.109    | -2.317   | 0.584    | 0.684    | -0.789   | -1.617   |
| 199                                   | 0.657    | 1.252    | 1.507    | 0.525    | -0.583   | -0.151   | 0.559    | 0.789    | 1.122    |
| 200                                   | -0.374   | -0.205   | -1.771   | -0.105   | -2.419   | -2.438   | 1.461    | 0.839    | -3.946   |
| 201                                   | 0.431    | 0.460    | -1.447   | -0.686   | -0.746   | -0.505   | 0.318    | -0.431   | 0.938    |
| 202                                   | 1.187    | 1.302    | 1.301    | -0.184   | 0.469    | 0.452    | 0.574    | -0.618   | 0.773    |
| 203                                   | -1.278   | -0.247   | 0.043    | 0.009    | 1.334    | 0.226    | -1.035   | -0.320   | 1.231    |
| 204                                   | 0.427    | 1.299    | 1.582    | 0.903    | -0.941   | -0.030   | -0.002   | 1.693    | 0.372    |
| 205                                   | 0.938    | -1.183   | -1.115   | -0.656   | 0.869    | 0.924    | 1.408    | 1.595    | 0.718    |
| 206                                   | 0.752    | -1.237   | -1.087   | -0.429   | 0.390    | 0.346    | 0.686    | 2.046    | 0.650    |
| 207                                   | 1.319    | 0.543    | -0.403   | -1.218   | 0.780    | -0.139   | 0.287    | -0.294   | 0.674    |
| 208                                   | -0.018   | 1.406    | -0.543   | 0.883    | -0.623   | 3.515    | -0.245   | -0.685   | 1.469    |
| 209                                   | -1.875   | 0.070    | 0.994    | -1.026   | 0.638    | 0.599    | 0.541    | 1.055    | 0.019    |
| 210                                   | -1.968   | 0.063    | 1.207    | -1.616   | 0.457    | 0.802    | 0.242    | 0.945    | -0.002   |
| 211                                   | -1.204   | -0.209   | -0.586   | 1.469    | 0.969    | -1.251   | 1.291    | -0.088   | -0.551   |
| 212                                   | -1.061   | -0.015   | -0.284   | 1.430    | 1.468    | -1.376   | 0.359    | -0.190   | 0.083    |
| 213                                   | 0.235    | -0.550   | -1.509   | -0.184   | -0.785   | -0.238   | 0.055    | 0.826    | 0.214    |
| 214                                   | -1.046   | -0.758   | -0.887   | 1.078    | 1.589    | -2.549   | -0.176   | -0.631   | -0.077   |
| 215                                   | -1.596   | -0.171   | 0.328    | -1.159   | 0.274    | -0.315   | -0.087   | -0.640   | -0.385   |
| 216                                   | -1.901   | -0.071   | 1.253    | -1.566   | 0.377    | 1.210    | 0.265    | 0.905    | 0.580    |
| 217                                   | 1.165    | 0.288    | 0.713    | -0.434   | 0.235    | -1.002   | -0.091   | -0.543   | 0.343    |
| 218                                   | -0.032   | -1.402   | -0.682   | 0.689    | -1.402   | -1.199   | -0.191   | 0.957    | -0.659   |
| 219                                   | -1.359   | 0.056    | -0.039   | -0.448   | 0.478    | -0.094   | -0.231   | -0.508   | -0.107   |
| 220                                   | -0.718   | 1.019    | -0.888   | 1.184    | -0.300   | 1.528    | -0.426   | 0.585    | -0.392   |
| 221                                   | -1.720   | 0.212    | 0.728    | -0.490   | 0.738    | 0.663    | 0.531    | 1.177    | 0.076    |
| 222                                   | -1.058   | -1.733   | 1.082    | -2.109   | 0.166    | -1.174   | -1.985   | -1.003   | 2.166    |
| 223                                   | 0.664    | -4.148   | 0.784    | 1.712    | 1.011    | 1.663    | -0.235   | 1.096    | -1.162   |
| 224                                   | -0.950   | 0.025    | -0.764   | 1.284    | 1.520    | -0.515   | -1.025   | -0.220   | 0.342    |
| 225                                   | -0.995   | -1.134   | 0.831    | -0.988   | -1.375   | 0.030    | 0.097    | -1.230   | 0.671    |
| 226                                   | -1.765   | -0.266   | 0.894    | -1.764   | -0.007   | 0.647    | -0.171   | -0.188   | 0.167    |
| 227                                   | -0.243   | -2.791   | 1.053    | -0.540   | -1.515   | 0.250    | -0.880   | 0.204    | 2.118    |
| 228                                   | -0.143   | -2.723   | 0.819    | -0.077   | -1.353   | -0.058   | -0.759   | 0.486    | 1.695    |
| 229                                   | 0.520    | 0.307    | -0.290   | -0.130   | -0.746   | -0.777   | 0.183    | -1.499   | 0.935    |
| 230                                   | 0.906    | -3.912   | 1.355    | 1.406    | 1.102    | 0.785    | 1.538    | 0.320    | 0.253    |
| 231                                   | -0.558   | -1.004   | -0.084   | 0.817    | 0.485    | -3.064   | 2.959    | -1.992   | 0.869    |
| 232                                   | 0.232    | 0.004    | 0.261    | 0.984    | -0.700   | 1.066    | -0.696   | -1.280   | 0.337    |
| 233                                   | 0.611    | -3.998   | 0.673    | 1.515    | 0.701    | 0.937    | 0.542    | 1.362    | 0.676    |
| 234                                   | -1.767   | -0.653   | 1.134    | -1.651   | 0.708    | 0.985    | -0.878   | -0.105   | 1.744    |
| 235                                   | -0.168   | -1.715   | 0.099    | -0.007   | -1.804   | -1.544   | 2.353    | -0.669   | 0.699    |
| 236                                   | -0.207   | -0.903   | -0.937   | 0.702    | -1.542   | -0.369   | 1.287    | -0.877   | -0.273   |
| 237                                   | -0.814   | 0.342    | -0.939   | 1.041    | 0.928    | -0.036   | -0.263   | -0.681   | 0.308    |
| 238                                   | -0.447   | 0.247    | -0.824   | 0.942    | -1.093   | 0.545    | 0.480    | -0.933   | -0.527   |

*Continued*

**Table I.5.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 239                                   | -1.410   | -0.545   | 0.672    | -1.432   | 0.193    | 0.121    | -1.135   | -0.958   | 0.886    |
| 240                                   | -0.241   | 1.231    | -0.493   | 1.077    | -1.236   | 2.503    | -0.418   | 0.150    | 0.173    |
| 241                                   | -0.124   | 1.315    | -0.520   | 0.964    | -0.913   | 3.027    | -0.161   | -0.361   | 0.991    |
| 242                                   | 0.682    | 1.336    | 1.816    | 0.567    | -0.479   | 0.049    | 1.935    | 1.596    | 1.754    |
| 243                                   | -1.289   | 0.650    | -0.309   | 1.630    | 1.169    | -0.083   | 2.070    | 1.316    | -0.501   |
| 244                                   | 0.611    | -0.299   | 0.068    | 0.276    | -0.332   | -0.144   | -1.006   | -0.968   | 0.084    |
| 245                                   | 0.606    | 1.238    | 1.558    | 0.602    | -0.766   | -0.499   | -0.040   | 1.458    | 0.543    |
| 246                                   | 0.593    | -4.100   | 0.770    | 1.757    | 0.811    | 1.437    | -0.292   | 1.128    | -0.520   |
| 247                                   | 0.913    | -0.604   | 0.857    | 0.374    | 0.161    | -0.279   | -1.150   | -0.489   | -1.186   |
| 248                                   | -0.589   | -0.924   | -1.123   | 0.827    | -0.168   | -1.205   | 0.397    | -0.547   | -0.229   |
| 249                                   | -1.612   | 0.148    | 0.208    | -0.358   | 0.861    | -0.537   | 0.170    | 0.137    | -0.612   |
| 250                                   | -0.319   | 0.977    | -0.739   | 0.954    | -1.530   | 1.696    | -0.188   | -0.293   | -0.507   |
| 251                                   | -1.022   | -0.168   | -0.309   | 1.523    | 1.836    | -0.807   | -0.155   | -0.137   | 0.838    |
| 252                                   | -1.217   | -0.843   | 0.434    | -1.136   | 0.584    | -0.848   | -1.120   | -1.378   | 1.172    |
| 253                                   | -0.759   | 1.015    | -0.668   | 0.928    | 1.388    | -0.261   | -0.971   | -0.518   | 0.545    |
| 254                                   | 0.549    | 1.463    | 0.985    | 0.772    | -0.121   | 2.267    | -0.015   | -0.603   | 1.218    |
| 255                                   | 0.433    | -0.473   | -1.705   | -0.582   | -0.326   | 0.148    | 1.061    | 0.835    | 1.260    |
| 256                                   | 1.133    | -0.835   | 0.880    | 0.197    | 0.729    | 0.188    | -0.851   | -0.550   | -2.729   |
| 257                                   | -1.689   | -0.243   | 0.484    | -1.467   | 0.261    | -0.361   | -0.201   | -0.677   | -0.403   |
| 258                                   | -0.598   | -0.551   | -1.122   | 0.806    | 0.685    | -0.892   | -0.616   | -0.797   | 0.320    |
| 259                                   | -0.214   | -1.099   | -1.307   | 0.573    | -1.509   | -0.452   | 0.577    | 0.238    | -0.654   |
| 260                                   | -1.261   | 0.315    | -0.367   | 0.192    | 1.085    | -0.525   | -0.466   | -0.339   | -0.162   |
| 261                                   | 0.220    | 1.149    | 1.364    | 1.040    | -1.288   | -0.176   | 0.325    | 1.252    | 0.006    |
| 262                                   | -1.072   | -0.867   | -0.045   | -1.416   | 0.569    | -0.095   | -1.975   | -1.265   | 1.505    |
| 263                                   | -1.075   | 0.599    | -0.662   | 1.374    | 0.838    | -0.119   | 0.144    | 0.614    | -0.631   |
| 264                                   | -0.126   | 0.939    | 1.385    | 0.856    | 1.293    | -2.620   | -0.015   | 0.248    | 1.094    |
| 265                                   | -1.061   | 0.620    | -0.661   | 1.328    | 1.093    | -0.075   | 0.335    | 0.375    | -0.208   |
| 266                                   | -0.472   | 0.533    | -1.007   | 1.182    | -1.531   | 2.215    | -0.177   | 0.114    | -0.679   |
| 267                                   | 0.809    | -0.216   | 0.681    | 0.179    | -0.290   | -1.030   | -0.812   | -0.395   | -0.054   |
| 268                                   | 0.014    | -0.623   | -1.423   | 0.439    | -0.946   | 0.626    | -1.629   | 0.383    | -0.568   |
| 269                                   | 0.079    | -0.780   | -1.481   | 0.181    | -0.972   | -0.074   | -0.912   | 1.120    | -0.479   |
| 270                                   | -1.720   | -0.260   | 0.569    | -1.667   | 0.346    | -0.285   | -0.300   | -0.776   | -0.183   |
| 271                                   | -0.063   | -1.212   | -1.004   | 0.411    | -1.410   | -1.058   | 1.499    | 0.105    | -0.136   |
| 272                                   | -1.395   | 0.540    | -0.234   | 0.321    | 1.073    | -0.540   | -0.059   | 0.304    | -0.718   |
| 273                                   | -0.390   | -1.092   | -1.418   | 0.409    | -2.211   | -2.075   | 1.143    | 1.316    | -2.648   |
| 274                                   | -1.767   | -0.089   | 0.723    | -1.430   | 0.607    | 0.126    | -0.427   | -0.087   | 0.066    |
| 275                                   | 0.217    | 0.602    | -0.680   | 0.062    | -1.351   | -0.967   | -1.647   | -0.553   | -0.747   |
| 276                                   | -1.998   | 0.279    | 1.135    | -1.781   | 0.340    | 0.596    | 0.317    | 0.879    | -0.678   |
| 277                                   | -1.983   | 0.287    | 1.050    | -1.566   | 0.314    | 0.420    | 0.503    | 0.956    | -0.933   |
| 278                                   | 0.669    | 1.300    | 1.818    | 0.683    | -0.459   | 0.213    | 1.021    | 1.814    | 1.197    |
| 279                                   | -1.657   | -0.153   | 0.975    | -0.460   | 1.214    | 1.423    | -0.353   | 1.259    | 1.701    |
| 280                                   | -0.712   | 0.622    | -0.849   | 1.068    | 1.639    | 0.955    | -0.797   | -0.655   | 1.500    |
| 281                                   | -0.762   | 0.642    | -0.879   | 1.131    | 1.027    | 0.733    | -1.119   | -0.148   | 0.536    |

*Continued*

**Table I.5.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 282                                   | -0.792   | 0.695    | -1.192   | 0.720    | 0.794    | -0.550   | -0.510   | -0.948   | -0.261   |
| 283                                   | 0.610    | -0.060   | -1.993   | -1.485   | -0.322   | -0.949   | 4.091    | 1.489    | 2.239    |
| 284                                   | 0.925    | 0.943    | 1.410    | 0.104    | -0.230   | -0.705   | 0.655    | 0.313    | 1.208    |
| 285                                   | -1.160   | 0.053    | -0.661   | 1.396    | 1.094    | -1.089   | 0.355    | 0.097    | -0.653   |
| 286                                   | 1.004    | 0.305    | 0.596    | -0.320   | -0.157   | -1.423   | -0.720   | -0.119   | 0.255    |
| 287                                   | 0.103    | 1.079    | 1.077    | 1.098    | -1.356   | 0.184    | 0.510    | 0.696    | 0.017    |
| 288                                   | 0.819    | -0.497   | 0.873    | 0.505    | -0.049   | -0.358   | -1.669   | -0.312   | -1.290   |
| 289                                   | -0.898   | -0.169   | 0.066    | 1.786    | -0.681   | -0.254   | 1.389    | 0.830    | -1.031   |
| 290                                   | -0.274   | -1.202   | -0.085   | 1.111    | 0.541    | -1.281   | -0.500   | -0.803   | 0.975    |
| 291                                   | 0.445    | -0.324   | -1.301   | -0.475   | -0.580   | -0.583   | 0.433    | 0.769    | 0.689    |
| 292                                   | -0.094   | -0.391   | -0.271   | 0.716    | 1.449    | -0.282   | -0.471   | -2.055   | 1.969    |
| 293                                   | 0.995    | -0.071   | -0.062   | -0.559   | 0.105    | -0.903   | -0.044   | 0.042    | 0.645    |
| 294                                   | -1.958   | 0.161    | 1.170    | -1.658   | 0.471    | 0.804    | 0.146    | 0.928    | -0.102   |
| 295                                   | 1.211    | -1.213   | -0.863   | -0.758   | 1.491    | 1.458    | 0.867    | 1.796    | -2.319   |
| 296                                   | 0.631    | -0.109   | -0.283   | -0.096   | -0.436   | -0.634   | -0.775   | -0.464   | 0.350    |
| 297                                   | 1.316    | 0.846    | -0.830   | -1.347   | 0.926    | 0.528    | -0.766   | -0.138   | -0.427   |
| 298                                   | -1.478   | -0.760   | 1.111    | 0.250    | 0.674    | 1.816    | 0.657    | 1.348    | 2.284    |
| 299                                   | 1.238    | -0.460   | 1.156    | -0.020   | 0.704    | -0.243   | 0.336    | -0.773   | -1.156   |
| 300                                   | -0.600   | -0.291   | -0.428   | 1.383    | 0.080    | 0.517    | 0.232    | -0.600   | 0.552    |
| 301                                   | 0.598    | -0.283   | -0.010   | 0.299    | -0.305   | 0.035    | -1.384   | -0.883   | -0.180   |
| 302                                   | 1.262    | -0.815   | 0.802    | -0.110   | 0.966    | 0.199    | 0.492    | -0.955   | -1.720   |
| 303                                   | 0.247    | 0.404    | 0.280    | 0.873    | -0.736   | 1.109    | -0.460   | -1.335   | 0.598    |
| 304                                   | 1.508    | -0.780   | 1.179    | -0.245   | 1.581    | 0.922    | 2.442    | -2.387   | -2.268   |
| 305                                   | 1.258    | -0.946   | 0.873    | 0.025    | 1.013    | 0.309    | -0.225   | -0.598   | -3.147   |
| 306                                   | 0.415    | -3.710   | 0.628    | 1.704    | 0.254    | 0.802    | 0.043    | 0.811    | 1.018    |
| 307                                   | 0.162    | -2.923   | 0.312    | 1.457    | -0.712   | -0.657   | -0.342   | 1.376    | 0.801    |
| 308                                   | -0.214   | 0.053    | 0.665    | 1.554    | -1.400   | 1.083    | 2.123    | -0.069   | 0.488    |
| 309                                   | 0.715    | 0.643    | 1.130    | 0.349    | -0.544   | -0.726   | -0.060   | -0.454   | 0.723    |
| 310                                   | 0.979    | -0.765   | 0.824    | 0.354    | 0.380    | -0.037   | -1.347   | -0.386   | -2.026   |
| 311                                   | -0.084   | -0.019   | -0.385   | 1.174    | -0.964   | 1.833    | -0.985   | -0.768   | 0.019    |
| 312                                   | 1.250    | -0.812   | 1.104    | 0.073    | 0.902    | 0.125    | 0.361    | -0.956   | -1.935   |
| 313                                   | 0.140    | 0.306    | 0.335    | 1.042    | -0.841   | 1.270    | 0.185    | -1.187   | 0.765    |
| 314                                   | 1.176    | 0.107    | 1.429    | 0.199    | 0.606    | 0.230    | -0.305   | -0.502   | -1.791   |
| 315                                   | 1.395    | 1.172    | 1.270    | -0.464   | 0.894    | 0.577    | 1.134    | -1.042   | 0.035    |
| 316                                   | 1.022    | 0.314    | 1.699    | 0.628    | 0.523    | 1.026    | -0.341   | -0.054   | -1.904   |
| 317                                   | -0.934   | -1.347   | 0.884    | -2.618   | -2.650   | -0.381   | -1.317   | -0.698   | -0.477   |
| 318                                   | 0.295    | -0.166   | 0.258    | 0.967    | -0.551   | 1.123    | -0.924   | -1.366   | 0.196    |
| 319                                   | -0.447   | -0.290   | -0.649   | 0.580    | 0.625    | -2.309   | -0.753   | -0.795   | -0.153   |
| 320                                   | 0.872    | -0.566   | 0.755    | 0.342    | 0.030    | -0.492   | -1.385   | -0.244   | -1.103   |
| 321                                   | 0.613    | 0.030    | -0.483   | -0.327   | -0.599   | -1.104   | -0.389   | -0.094   | 0.498    |
| 322                                   | 0.157    | 0.413    | 0.888    | 0.879    | -0.677   | -1.032   | -0.225   | -0.425   | 0.187    |
| 323                                   | 0.949    | -0.531   | 0.998    | 0.297    | 0.087    | -0.705   | -0.852   | -0.222   | -0.818   |
| 324                                   | 0.843    | -0.272   | 0.770    | 0.206    | -0.219   | -1.006   | -0.909   | -0.275   | -0.250   |

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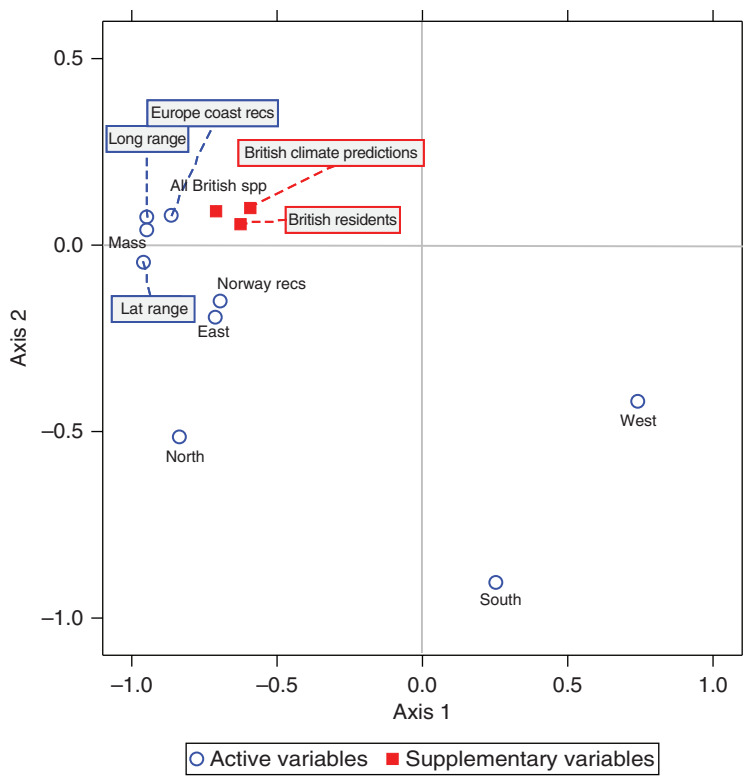
**Table I.5.** Continued.

| Spp.<br>no. in<br>Supplm.<br>Appx 4.1 | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| 325                                   | 0.528    | 0.059    | 1.053    | 0.860    | -0.484   | 0.226    | -0.273   | -0.884   | 0.389    |
| 326                                   | 1.147    | -0.860   | 0.935    | 0.286    | 0.881    | 0.640    | -0.803   | -1.018   | -3.449   |
| 327                                   | 0.423    | -0.101   | 0.107    | 0.622    | -0.550   | 0.396    | -1.494   | -1.193   | -0.129   |
| 328                                   | 1.215    | -0.368   | -0.209   | -0.715   | 0.884    | 0.228    | 0.346    | 0.004    | -0.565   |
| 329                                   | 0.545    | 0.215    | -0.250   | 0.105    | -0.457   | 0.113    | -0.911   | -1.511   | 0.571    |
| 330                                   | 1.133    | 0.369    | 1.990    | 0.519    | 0.718    | 1.001    | 1.000    | 0.903    | -1.254   |
| 331                                   | -0.739   | -1.386   | 1.092    | -2.127   | -2.831   | -0.038   | 0.707    | -1.689   | 0.446    |
| 332                                   | 0.591    | -0.687   | 0.065    | 0.495    | -0.136   | 0.411    | -1.246   | -0.929   | -0.362   |
| 333                                   | 0.798    | -0.299   | 0.715    | 0.235    | -0.294   | -1.033   | -0.897   | -0.301   | -0.175   |
| 334                                   | 0.614    | -3.715   | 0.692    | 1.215    | 0.347    | -0.192   | 1.333    | 1.826    | 1.803    |
| 335                                   | 0.250    | -0.147   | 0.235    | 0.931    | -0.701   | 0.847    | -0.449   | -1.437   | 0.463    |
| 336                                   | 1.080    | -0.065   | -0.321   | -0.724   | 0.444    | -0.287   | 0.003    | 0.057    | 0.424    |
| 337                                   | 1.176    | 0.107    | 1.429    | 0.199    | 0.606    | 0.230    | -0.305   | -0.502   | -1.791   |
| 338                                   | 1.169    | -0.377   | 1.147    | 0.040    | 0.518    | -0.416   | 0.031    | -0.605   | -0.903   |
| 339                                   | 1.082    | -0.796   | 0.781    | 0.173    | 0.568    | -0.062   | -1.062   | -0.254   | -2.280   |
| 340                                   | 1.022    | -0.778   | 0.870    | 0.286    | 0.410    | -0.204   | -1.172   | -0.238   | -1.952   |
| 341                                   | 0.627    | -0.748   | 0.134    | 0.474    | 0.125    | 1.071    | 0.896    | -2.485   | 1.304    |
| 342                                   | 0.360    | 0.847    | 1.213    | 0.905    | -0.943   | 0.064    | 0.245    | 0.160    | 0.547    |
| 343                                   | 0.976    | -0.764   | 0.825    | 0.360    | 0.370    | -0.050   | -1.406   | -0.349   | -2.070   |
| 344                                   | 1.242    | 0.218    | 0.795    | -0.349   | 0.597    | -0.207   | 0.033    | -1.229   | -0.451   |
| 345                                   | 1.037    | 0.239    | 0.624    | -0.308   | -0.037   | -1.233   | -0.604   | -0.262   | 0.211    |
| 346                                   | 1.012    | 0.574    | 0.116    | -0.639   | -0.132   | -1.294   | -0.701   | -0.264   | 0.727    |
| 347                                   | 1.521    | 0.706    | -0.912   | -1.680   | 1.508    | 1.131    | 1.319    | -0.849   | -0.108   |
| 348                                   | 1.300    | 0.849    | -0.827   | -1.318   | 0.880    | 0.469    | -1.038   | 0.035    | -0.630   |
| 349                                   | 1.209    | 0.736    | -1.602   | -1.609   | 0.903    | 0.722    | -0.762   | 1.798    | 0.172    |
| 350                                   | -0.705   | 0.473    | -0.969   | 1.002    | 1.132    | 0.498    | -0.973   | -0.695   | 0.784    |
| 351                                   | 0.656    | 0.456    | -0.855   | -0.651   | -0.613   | -1.205   | -1.299   | 0.756    | 0.232    |
| 352                                   | 0.236    | 1.117    | 1.526    | 1.015    | -1.376   | -0.619   | 0.667    | 1.632    | -0.140   |
| 353                                   | -0.882   | 0.138    | 0.082    | -0.412   | -1.374   | 1.284    | 0.687    | -0.840   | -0.066   |
| 354                                   | 1.416    | 0.468    | 0.219    | -0.920   | 1.006    | 0.203    | 0.378    | -1.481   | -0.670   |
| 355                                   | 1.245    | 0.353    | -0.691   | -1.240   | 0.765    | 0.013    | 0.563    | 0.134    | 0.997    |
| 356                                   | 1.090    | 0.236    | 0.670    | -0.388   | 0.068    | -1.193   | 0.049    | -0.539   | 0.664    |
| 357                                   | 0.651    | -0.131   | -1.519   | -0.893   | -0.158   | -0.290   | 0.729    | 1.306    | 1.315    |
| 358                                   | 1.474    | 0.081    | 0.524    | -0.708   | 1.291    | 0.619    | 0.884    | -1.917   | -2.059   |
| 359                                   | -1.518   | 0.426    | 1.070    | -0.724   | 1.098    | 1.005    | -0.422   | 0.900    | 1.250    |
| 360                                   | 0.728    | 0.377    | -0.842   | -0.712   | -0.478   | -1.234   | -1.599   | 1.378    | 0.035    |
| 361                                   | -0.941   | 0.694    | -0.700   | 1.286    | 0.950    | 0.502    | 0.171    | 0.275    | 0.200    |
| 362                                   | 0.363    | 0.473    | -1.433   | -0.558   | -0.943   | -0.761   | -0.859   | 0.319    | 0.059    |
| 363                                   | 0.239    | -0.205   | -1.789   | -0.502   | -0.874   | -0.457   | 0.528    | 0.911    | 0.243    |
| 364                                   | -0.431   | 0.880    | -1.150   | 0.940    | -1.518   | 2.214    | 0.262    | -0.316   | -0.440   |
| 365                                   | -0.641   | 0.253    | -0.792   | 1.174    | -1.773   | 1.916    | 4.858    | -0.998   | -0.143   |
| 366                                   | 0.414    | -0.546   | -1.667   | -0.499   | -0.326   | 0.238    | 1.021    | 0.699    | 1.246    |
| 367                                   | 0.407    | 0.449    | -1.351   | -0.625   | -0.994   | -1.231   | -1.190   | 1.078    | -0.303   |

*Continued*

**Table I.5.** Continued.

| Spp.<br>no. in<br>Supplm. | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|---------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| Appx 4.1                  |          |          |          |          |          |          |          |          |          |
| 368                       | -1.797   | 0.108    | 0.782    | -2.084   | -0.167   | 0.421    | -0.072   | -0.365   | -0.724   |
| 369                       | -1.465   | 0.828    | 0.385    | 0.238    | 1.147    | 0.041    | 0.265    | 1.243    | -0.320   |
| 370                       | 1.036    | 0.307    | 0.647    | -0.359   | -0.115   | -1.463   | -0.437   | -0.160   | 0.431    |
| 371                       | -0.804   | -1.011   | 0.945    | -2.215   | -3.127   | -0.509   | 0.018    | -1.269   | -1.020   |
| 372                       | -0.778   | -0.770   | -0.720   | 1.350    | 1.139    | -0.212   | -0.179   | -0.791   | 1.117    |
| 373                       | 1.352    | 0.252    | -0.627   | -1.205   | 1.146    | 0.642    | 0.274    | -0.088   | -0.788   |
| 374                       | 1.209    | 0.736    | -1.602   | -1.609   | 0.903    | 0.722    | -0.762   | 1.798    | 0.172    |
| 375                       | 1.510    | 0.516    | -0.839   | -1.584   | 1.535    | 1.164    | 1.418    | -0.810   | -0.423   |
| 376                       | -1.725   | 0.515    | 0.657    | -0.681   | 0.952    | 0.593    | -0.019   | 1.161    | -0.087   |
| 377                       | 1.492    | 0.073    | -0.576   | -1.325   | 1.587    | 1.190    | 1.646    | -0.887   | -1.106   |
| 378                       | 1.246    | 0.426    | 0.669    | -0.539   | 0.446    | -0.655   | -0.092   | -0.853   | 0.095    |
| 379                       | 0.998    | 0.605    | -1.058   | -1.199   | 0.148    | -0.568   | -0.602   | 1.109    | 1.110    |
| 380                       | 0.879    | 0.288    | 0.112    | -0.350   | -0.283   | -1.210   | -1.284   | -0.016   | 0.080    |
| 381                       | -1.046   | 0.284    | -0.860   | 1.127    | 1.588    | -1.147   | -0.713   | -0.339   | -0.195   |
| 382                       | 0.512    | 1.358    | 1.740    | 0.856    | -0.863   | -0.210   | -0.380   | 2.464    | 0.146    |
| 383                       | 0.422    | 1.306    | 1.630    | 0.927    | -0.997   | -0.189   | -0.315   | 2.063    | 0.100    |
| 384                       | 0.557    | 0.269    | -0.755   | -0.419   | -0.735   | -1.140   | -1.157   | 0.381    | 0.083    |
| 385                       | 0.243    | 1.116    | 1.525    | 1.002    | -1.355   | -0.593   | 0.790    | 1.554    | -0.048   |
| 386                       | 1.291    | 0.664    | 0.179    | -0.802   | 0.651    | -0.117   | -0.653   | -1.084   | -0.469   |
| 387                       | -0.358   | 0.581    | -1.033   | 1.039    | -1.216   | 2.690    | 0.628    | -0.623   | 0.379    |
| 388                       | -0.587   | -0.245   | -0.895   | 1.163    | 1.159    | 0.611    | -1.724   | -0.657   | 0.827    |
| 389                       | 0.520    | -3.695   | 0.435    | 1.327    | 0.390    | 0.522    | 1.096    | 1.251    | 1.693    |
| 390                       | 0.871    | -0.541   | 0.832    | 0.379    | 0.015    | -0.504   | -1.389   | -0.259   | -1.117   |
| 391                       | -0.114   | -2.426   | 0.443    | 0.430    | -1.486   | -0.960   | -0.595   | 1.024    | 0.655    |
| 392                       | 0.202    | -3.573   | 0.916    | 1.075    | -0.154   | 1.243    | -0.562   | 0.219    | 1.707    |
| 393                       | -1.865   | 0.393    | 0.833    | -1.136   | 0.515    | 0.394    | 0.770    | 0.908    | -0.720   |
| 394                       | 0.515    | -0.416   | -1.421   | -0.352   | -0.029   | 0.950    | 0.516    | -0.495   | 1.399    |
| 395                       | 1.392    | 0.052    | -0.052   | -1.006   | 1.104    | 0.272    | 1.325    | -1.094   | 0.169    |
| 396                       | 0.566    | 0.545    | -1.389   | -0.792   | -0.588   | -0.660   | -0.956   | 0.673    | 0.589    |
| 397                       | 1.369    | -0.045   | -0.090   | -0.955   | 1.125    | 0.412    | 1.361    | -1.147   | 0.090    |
| 398                       | 1.270    | -0.980   | -0.965   | -0.979   | 1.557    | 1.461    | 1.376    | 1.572    | -1.679   |
| 399                       | 1.166    | -0.096   | -0.217   | -0.733   | 0.657    | -0.052   | -0.019   | -0.093   | -0.128   |
| 400                       | 0.983    | 0.390    | -0.427   | -0.884   | -0.061   | -1.196   | -0.375   | 0.552    | 0.910    |
| 401                       | 1.260    | 0.053    | -0.179   | -0.816   | 0.845    | 0.161    | -0.322   | -0.190   | -1.004   |
| 402                       | 1.374    | -0.252   | -0.261   | -0.946   | 1.300    | 0.773    | 1.131    | -0.679   | -1.001   |
| 403                       | 1.335    | 1.146    | 1.275    | -0.413   | 0.715    | 0.295    | 1.004    | -0.770   | 0.508    |
| 404                       | 0.359    | 1.259    | 1.597    | 0.973    | -1.129   | -0.327   | -0.246   | 2.031    | -0.053   |
| 405                       | -0.112   | 1.077    | 0.165    | 1.241    | -1.236   | 1.799    | -1.019   | 0.544    | -0.207   |
| 406                       | -0.992   | 0.920    | 0.663    | 1.558    | 1.657    | -1.252   | 1.388    | 1.066    | 0.256    |
| 407                       | 0.368    | 0.854    | 1.257    | 0.700    | -1.276   | -1.188   | 0.384    | 0.503    | 0.014    |
| 408                       | -0.174   | 0.238    | -1.505   | 0.454    | -1.279   | 1.140    | -0.514   | -1.107   | -0.244   |
| 409                       | 0.967    | 0.686    | -1.575   | -1.306   | 0.374    | 0.353    | -0.820   | 1.131    | 1.127    |



Factor coordinates of variables



Table I.6. Factor score coefficients, based on correlations (BritishPredSpecies).

| Variable   | Factor 1 | Factor 2 | Factor 3 | Factor 4 | Factor 5 | Factor 6 | Factor 7 | Factor 8 | Factor 9 |
|------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|
| tcMass     | -0.164   | 0.031    | 0.033    | 0.31     | -0.474   | -0.61    | -2.82    | 1.80     | -2.11    |
| tNorthMost | -0.145   | -0.385   | 0.126    | 0.09     | -0.225   | -0.56    | 1.57     | -0.33    | -9.52    |
| tSouthMost | 0.044    | -0.679   | 0.275    | 0.42     | 0.288    | 0.55     | -0.59    | 0.42     | 4.96     |
| tLatRange  | -0.167   | -0.034   | -0.057   | -0.01    | -0.615   | -1.02    | 1.30     | 0.13     | 9.60     |
| tcWestMost | 0.128    | -0.314   | -0.531   | -0.46    | -0.075   | -1.12    | -1.09    | -2.40    | -0.26    |
| tcEastMost | -0.124   | -0.147   | -0.834   | -0.18    | 0.197    | 0.94     | 0.27     | 2.57     | -0.05    |
| tLongRange | -0.164   | 0.058    | -0.186   | 0.34     | -0.122   | 0.91     | -0.44    | -4.80    | 0.54     |
| tCoastRecs | -0.150   | 0.060    | 0.071    | -0.07    | 1.558    | -0.79    | -0.20    | -0.38    | 0.97     |
| tSNorRecs  | -0.121   | -0.114   | 0.440    | -1.05    | -0.179   | 0.68     | -0.65    | -0.28    | 0.68     |

## II. Logistic Regression: British resident species versus non-residents using PCA vector 1.

**A. Table IIA.1.** Predictions (BritishPredSpecies).

Dependent variable: Britain (post 1960 residents) 0 absent, 1 present in Britain

| Spp. no. (as above) | Observed in Britain | Predicted | Residuals |
|---------------------|---------------------|-----------|-----------|
| 1                   | 0                   | 0.00      | -0.000    |
| 2                   | 0                   | 0.26      | -0.258    |
| 3                   | 0                   | 0.00      | -0.002    |
| 4                   | 0                   | 0.11      | -0.113    |
| 5                   | 0                   | 0.02      | -0.017    |
| 6                   | 0                   | 0.00      | -0.003    |
| 7                   | 0                   | 0.00      | -0.000    |
| 8                   | 1                   | 0.52      | 0.479     |
| 9                   | 0                   | 0.01      | -0.011    |
| 10                  | 0                   | 0.00      | -0.000    |
| 11                  | 1                   | 0.81      | 0.187     |
| 12                  | 0                   | 0.00      | -0.005    |
| 13                  | 0                   | 0.00      | -0.002    |
| 14                  | 1                   | 0.80      | 0.196     |
| 15                  | 0                   | 0.15      | -0.154    |
| 16                  | 1                   | 0.85      | 0.153     |
| 17                  | 0                   | 0.00      | -0.000    |
| 18                  | 0                   | 0.57      | -0.569    |
| 19                  | 0                   | 0.01      | -0.010    |
| 20                  | 0                   | 0.16      | -0.163    |
| 21                  | 0                   | 0.00      | -0.000    |
| 22                  | 0                   | 0.00      | -0.001    |
| 23                  | 0                   | 0.00      | -0.000    |
| 24                  | 0                   | 0.07      | -0.071    |
| 25                  | 0                   | 0.01      | -0.008    |
| 26                  | 0                   | 0.00      | -0.004    |
| 27                  | 0                   | 0.01      | -0.013    |
| 28                  | 1                   | 0.76      | 0.238     |
| 29                  | 0                   | 0.00      | -0.002    |
| 30                  | 0                   | 0.11      | -0.112    |
| 31                  | 0                   | 0.01      | -0.008    |
| 32                  | 0                   | 0.00      | -0.000    |
| 33                  | 0                   | 0.00      | -0.003    |
| 34                  | 0                   | 0.00      | -0.000    |
| 35                  | 0                   | 0.06      | -0.056    |
| 36                  | 0                   | 0.00      | -0.000    |
| 37                  | 0                   | 0.00      | -0.000    |
| 38                  | 0                   | 0.03      | -0.027    |
| 39                  | 0                   | 0.00      | -0.002    |
| 40                  | 1                   | 0.18      | 0.823     |
| 41                  | 0                   | 0.00      | -0.000    |
| 42                  | 1                   | 0.66      | 0.340     |
| 43                  | 1                   | 0.40      | 0.597     |

*Continued*

A. Table IIA.1. Continued.

| Spp. no. (as above) | Observed in Britain | Predicted | Residuals |
|---------------------|---------------------|-----------|-----------|
| 44                  | 0                   | 0.00      | -0.000    |
| 45                  | 0                   | 0.40      | -0.397    |
| 46                  | 0                   | 0.00      | -0.002    |
| 47                  | 0                   | 0.00      | -0.000    |
| 48                  | 1                   | 0.86      | 0.136     |
| 49                  | 0                   | 0.15      | -0.154    |
| 50                  | 0                   | 0.11      | -0.112    |
| 51                  | 0                   | 0.00      | -0.000    |
| 52                  | 0                   | 0.00      | -0.000    |
| 53                  | 0                   | 0.00      | -0.001    |
| 54                  | 0                   | 0.00      | -0.000    |
| 55                  | 0                   | 0.01      | -0.010    |
| 56                  | 0                   | 0.00      | -0.001    |
| 57                  | 1                   | 0.93      | 0.073     |
| 58                  | 0                   | 0.00      | -0.000    |
| 59                  | 0                   | 0.00      | -0.002    |
| 60                  | 0                   | 0.00      | -0.000    |
| 61                  | 0                   | 0.82      | -0.825    |
| 62                  | 0                   | 0.15      | -0.145    |
| 63                  | 0                   | 0.00      | -0.000    |
| 64                  | 0                   | 0.00      | -0.000    |
| 65                  | 0                   | 0.00      | -0.001    |
| 66                  | 1                   | 0.73      | 0.270     |
| 67                  | 0                   | 0.00      | -0.003    |
| 68                  | 0                   | 0.00      | -0.000    |
| 69                  | 0                   | 0.24      | -0.241    |
| 70                  | 0                   | 0.01      | -0.005    |
| 71                  | 0                   | 0.14      | -0.140    |
| 72                  | 0                   | 0.00      | -0.001    |
| 73                  | 0                   | 0.00      | -0.000    |
| 74                  | 0                   | 0.00      | -0.000    |
| 75                  | 0                   | 0.09      | -0.093    |
| 76                  | 0                   | 0.00      | -0.000    |
| 77                  | 0                   | 0.00      | -0.001    |
| 78                  | 0                   | 0.00      | -0.000    |
| 79                  | 0                   | 0.00      | -0.000    |
| 80                  | 0                   | 0.00      | -0.001    |
| 81                  | 0                   | 0.02      | -0.023    |
| 82                  | 0                   | 0.00      | -0.000    |
| 83                  | 1                   | 0.92      | 0.084     |
| 84                  | 0                   | 0.00      | -0.002    |
| 85                  | 0                   | 0.00      | -0.002    |
| 86                  | 1                   | 0.87      | 0.135     |
| 87                  | 1                   | 0.92      | 0.077     |
| 88                  | 0                   | 0.00      | -0.001    |
| 89                  | 0                   | 0.00      | -0.004    |
| 90                  | 0                   | 0.00      | -0.000    |
| 91                  | 0                   | 0.02      | -0.017    |

Continued

**A. Table IIA.1.** Continued.

| Spp. no. (as above) | Observed in Britain | Predicted | Residuals |
|---------------------|---------------------|-----------|-----------|
| 92                  | 1                   | 0.93      | 0.066     |
| 93                  | 1                   | 0.91      | 0.088     |
| 94                  | 0                   | 0.00      | -0.000    |
| 95                  | 0                   | 0.00      | -0.004    |
| 96                  | 0                   | 0.54      | -0.536    |
| 97                  | 0                   | 0.00      | -0.000    |
| 98                  | 0                   | 0.00      | -0.000    |
| 99                  | 0                   | 0.00      | -0.000    |
| 100                 | 0                   | 0.00      | -0.000    |
| 101                 | 0                   | 0.00      | -0.000    |
| 102                 | 0                   | 0.27      | -0.267    |
| 103                 | 0                   | 0.00      | -0.003    |
| 104                 | 0                   | 0.00      | -0.000    |
| 105                 | 0                   | 0.00      | -0.000    |
| 106                 | 1                   | 0.28      | 0.720     |
| 107                 | 0                   | 0.00      | -0.002    |
| 108                 | 1                   | 0.53      | 0.466     |
| 109                 | 0                   | 0.00      | -0.001    |
| 110                 | 0                   | 0.00      | -0.000    |
| 111                 | 0                   | 0.00      | -0.001    |
| 112                 | 0                   | 0.02      | -0.018    |
| 113                 | 0                   | 0.00      | -0.001    |
| 114                 | 1                   | 0.92      | 0.083     |
| 115                 | 1                   | 0.92      | 0.081     |
| 116                 | 0                   | 0.00      | -0.000    |
| 117                 | 0                   | 0.00      | -0.000    |
| 118                 | 0                   | 0.00      | -0.000    |
| 119                 | 0                   | 0.02      | -0.021    |
| 120                 | 0                   | 0.25      | -0.247    |
| 121                 | 0                   | 0.00      | -0.005    |
| 122                 | 0                   | 0.00      | -0.000    |
| 123                 | 1                   | 0.84      | 0.156     |
| 124                 | 0                   | 0.02      | -0.020    |
| 125                 | 0                   | 0.80      | -0.803    |
| 126                 | 0                   | 0.39      | -0.389    |
| 127                 | 0                   | 0.00      | -0.000    |
| 128                 | 1                   | 0.74      | 0.264     |
| 129                 | 0                   | 0.54      | -0.541    |
| 130                 | 0                   | 0.00      | -0.001    |
| 131                 | 0                   | 0.00      | -0.000    |
| 132                 | 1                   | 0.19      | 0.813     |
| 133                 | 0                   | 0.00      | -0.004    |
| 134                 | 0                   | 0.00      | -0.000    |
| 135                 | 0                   | 0.00      | -0.000    |
| 136                 | 0                   | 0.00      | -0.000    |
| 137                 | 0                   | 0.00      | -0.003    |

*Continued*

**A. Table IIA.1.** Continued.

| Spp. no. (as above) | Observed in Britain | Predicted | Residuals |
|---------------------|---------------------|-----------|-----------|
| 138                 | 0                   | 0.00      | -0.001    |
| 139                 | 0                   | 0.13      | -0.134    |
| 140                 | 0                   | 0.02      | -0.025    |
| 141                 | 0                   | 0.13      | -0.132    |
| 142                 | 0                   | 0.11      | -0.110    |
| 143                 | 0                   | 0.07      | -0.069    |
| 144                 | 0                   | 0.64      | -0.643    |
| 145                 | 0                   | 0.00      | -0.000    |
| 146                 | 1                   | 0.93      | 0.066     |
| 147                 | 0                   | 0.01      | -0.007    |
| 148                 | 0                   | 0.00      | -0.000    |
| 149                 | 0                   | 0.35      | -0.353    |
| 150                 | 0                   | 0.57      | -0.567    |
| 151                 | 0                   | 0.00      | -0.000    |
| 152                 | 0                   | 0.22      | -0.220    |
| 153                 | 1                   | 0.27      | 0.734     |
| 154                 | 0                   | 0.02      | -0.024    |
| 155                 | 0                   | 0.03      | -0.026    |
| 156                 | 1                   | 0.84      | 0.157     |
| 157                 | 0                   | 0.08      | -0.079    |
| 158                 | 0                   | 0.81      | -0.809    |
| 159                 | 0                   | 0.00      | -0.001    |
| 160                 | 0                   | 0.00      | -0.000    |
| 161                 | 0                   | 0.00      | -0.000    |
| 162                 | 1                   | 0.29      | 0.706     |
| 163                 | 0                   | 0.00      | -0.001    |
| 164                 | 1                   | 0.19      | 0.807     |
| 165                 | 0                   | 0.00      | -0.000    |
| 166                 | 0                   | 0.00      | -0.000    |
| 167                 | 0                   | 0.01      | -0.013    |
| 168                 | 0                   | 0.00      | -0.000    |
| 169                 | 0                   | 0.03      | -0.028    |
| 170                 | 0                   | 0.00      | -0.000    |
| 171                 | 0                   | 0.05      | -0.047    |
| 172                 | 0                   | 0.01      | -0.010    |
| 173                 | 0                   | 0.01      | -0.006    |
| 174                 | 0                   | 0.00      | -0.000    |
| 175                 | 0                   | 0.00      | -0.000    |
| 176                 | 0                   | 0.00      | -0.000    |
| 177                 | 0                   | 0.00      | -0.001    |
| 178                 | 0                   | 0.00      | -0.000    |
| 179                 | 0                   | 0.45      | -0.448    |
| 180                 | 1                   | 0.94      | 0.061     |
| 181                 | 0                   | 0.00      | -0.000    |
| 182                 | 0                   | 0.00      | -0.000    |
| 183                 | 0                   | 0.00      | -0.000    |

*Continued*

**A. Table IIA.1.** Continued.

| Spp. no. (as above) | Observed in Britain | Predicted | Residuals |
|---------------------|---------------------|-----------|-----------|
| 184                 | 0                   | 0.01      | -0.012    |
| 185                 | 0                   | 0.11      | -0.108    |
| 186                 | 0                   | 0.00      | -0.000    |
| 187                 | 0                   | 0.10      | -0.098    |
| 188                 | 0                   | 0.00      | -0.001    |
| 189                 | 0                   | 0.33      | -0.335    |
| 190                 | 0                   | 0.00      | -0.000    |
| 191                 | 1                   | 0.14      | 0.859     |
| 192                 | 0                   | 0.15      | -0.150    |
| 193                 | 1                   | 0.55      | 0.449     |
| 194                 | 0                   | 0.00      | -0.000    |
| 195                 | 0                   | 0.00      | -0.000    |
| 196                 | 0                   | 0.02      | -0.021    |
| 197                 | 0                   | 0.00      | -0.001    |
| 198                 | 0                   | 0.07      | -0.069    |
| 199                 | 0                   | 0.00      | -0.000    |
| 200                 | 0                   | 0.02      | -0.020    |
| 201                 | 0                   | 0.00      | -0.001    |
| 202                 | 0                   | 0.00      | -0.000    |
| 203                 | 1                   | 0.44      | 0.557     |
| 204                 | 0                   | 0.00      | -0.001    |
| 205                 | 0                   | 0.00      | -0.000    |
| 206                 | 0                   | 0.00      | -0.000    |
| 207                 | 0                   | 0.00      | -0.000    |
| 208                 | 0                   | 0.00      | -0.005    |
| 209                 | 1                   | 0.90      | 0.102     |
| 210                 | 1                   | 0.93      | 0.072     |
| 211                 | 0                   | 0.37      | -0.371    |
| 212                 | 1                   | 0.25      | 0.752     |
| 213                 | 0                   | 0.00      | -0.002    |
| 214                 | 0                   | 0.24      | -0.237    |
| 215                 | 1                   | 0.74      | 0.258     |
| 216                 | 1                   | 0.91      | 0.092     |
| 217                 | 0                   | 0.00      | -0.000    |
| 218                 | 0                   | 0.01      | -0.005    |
| 219                 | 0                   | 0.52      | -0.524    |
| 220                 | 0                   | 0.08      | -0.076    |
| 221                 | 1                   | 0.83      | 0.174     |
| 222                 | 0                   | 0.25      | -0.246    |
| 223                 | 0                   | 0.00      | -0.000    |
| 224                 | 0                   | 0.17      | -0.174    |
| 225                 | 0                   | 0.20      | -0.202    |
| 226                 | 1                   | 0.85      | 0.150     |
| 227                 | 0                   | 0.01      | -0.012    |
| 228                 | 0                   | 0.01      | -0.008    |
| 229                 | 0                   | 0.00      | -0.001    |

*Continued*

**A. Table IIA.1.** Continued.

| Spp. no. (as above) | Observed in Britain | Predicted | Residuals |
|---------------------|---------------------|-----------|-----------|
| 230                 | 0                   | 0.00      | -0.000    |
| 231                 | 0                   | 0.04      | -0.041    |
| 232                 | 0                   | 0.00      | -0.002    |
| 233                 | 0                   | 0.00      | -0.000    |
| 234                 | 1                   | 0.85      | 0.149     |
| 235                 | 0                   | 0.01      | -0.009    |
| 236                 | 0                   | 0.01      | -0.010    |
| 237                 | 0                   | 0.11      | -0.109    |
| 238                 | 0                   | 0.03      | -0.027    |
| 239                 | 0                   | 0.57      | -0.575    |
| 240                 | 0                   | 0.01      | -0.012    |
| 241                 | 0                   | 0.01      | -0.007    |
| 242                 | 0                   | 0.00      | -0.000    |
| 243                 | 1                   | 0.45      | 0.546     |
| 244                 | 0                   | 0.00      | -0.000    |
| 245                 | 0                   | 0.00      | -0.000    |
| 246                 | 0                   | 0.00      | -0.000    |
| 247                 | 0                   | 0.00      | -0.000    |
| 248                 | 0                   | 0.05      | -0.047    |
| 249                 | 0                   | 0.75      | -0.753    |
| 250                 | 0                   | 0.02      | -0.016    |
| 251                 | 1                   | 0.22      | 0.780     |
| 252                 | 0                   | 0.38      | -0.382    |
| 253                 | 0                   | 0.09      | -0.089    |
| 254                 | 0                   | 0.00      | -0.000    |
| 255                 | 0                   | 0.00      | -0.001    |
| 256                 | 0                   | 0.00      | -0.000    |
| 257                 | 1                   | 0.81      | 0.193     |
| 258                 | 0                   | 0.05      | -0.048    |
| 259                 | 0                   | 0.01      | -0.011    |
| 260                 | 1                   | 0.43      | 0.574     |
| 261                 | 0                   | 0.00      | -0.002    |
| 262                 | 0                   | 0.26      | -0.256    |
| 263                 | 0                   | 0.26      | -0.259    |
| 264                 | 0                   | 0.01      | -0.007    |
| 265                 | 0                   | 0.25      | -0.248    |
| 266                 | 0                   | 0.03      | -0.030    |
| 267                 | 0                   | 0.00      | -0.000    |
| 268                 | 0                   | 0.00      | -0.004    |
| 269                 | 0                   | 0.00      | -0.003    |
| 270                 | 0                   | 0.83      | -0.825    |
| 271                 | 0                   | 0.01      | -0.006    |
| 272                 | 1                   | 0.56      | 0.440     |
| 273                 | 0                   | 0.02      | -0.021    |
| 274                 | 1                   | 0.85      | 0.149     |
| 275                 | 0                   | 0.00      | -0.002    |

*Continued*

**A. Table IIA.1.** Continued.

| Spp. no. (as above) | Observed in Britain | Predicted | Residuals |
|---------------------|---------------------|-----------|-----------|
| 276                 | 1                   | 0.94      | 0.064     |
| 277                 | 1                   | 0.93      | 0.068     |
| 278                 | 0                   | 0.00      | -0.000    |
| 279                 | 1                   | 0.79      | 0.214     |
| 280                 | 0                   | 0.07      | -0.075    |
| 281                 | 0                   | 0.09      | -0.090    |
| 282                 | 0                   | 0.10      | -0.100    |
| 283                 | 0                   | 0.00      | -0.000    |
| 284                 | 0                   | 0.00      | -0.000    |
| 285                 | 0                   | 0.33      | -0.330    |
| 286                 | 0                   | 0.00      | -0.000    |
| 287                 | 0                   | 0.00      | -0.003    |
| 288                 | 0                   | 0.00      | -0.000    |
| 289                 | 0                   | 0.15      | -0.146    |
| 290                 | 0                   | 0.01      | -0.014    |
| 291                 | 0                   | 0.00      | -0.001    |
| 292                 | 0                   | 0.01      | -0.007    |
| 293                 | 0                   | 0.00      | -0.000    |
| 294                 | 1                   | 0.93      | 0.075     |
| 295                 | 0                   | 0.00      | -0.000    |
| 296                 | 0                   | 0.00      | -0.000    |
| 297                 | 0                   | 0.00      | -0.000    |
| 298                 | 1                   | 0.64      | 0.360     |
| 299                 | 0                   | 0.00      | -0.000    |
| 300                 | 1                   | 0.05      | 0.951     |
| 301                 | 0                   | 0.00      | -0.000    |
| 302                 | 0                   | 0.00      | -0.000    |
| 303                 | 0                   | 0.00      | -0.002    |
| 304                 | 0                   | 0.00      | -0.000    |
| 305                 | 0                   | 0.00      | -0.000    |
| 306                 | 0                   | 0.00      | -0.001    |
| 307                 | 0                   | 0.00      | -0.002    |
| 308                 | 1                   | 0.01      | 0.989     |
| 309                 | 0                   | 0.00      | -0.000    |
| 310                 | 0                   | 0.00      | -0.000    |
| 311                 | 0                   | 0.01      | -0.006    |
| 312                 | 0                   | 0.00      | -0.000    |
| 313                 | 0                   | 0.00      | -0.003    |
| 314                 | 0                   | 0.00      | -0.000    |
| 315                 | 0                   | 0.00      | -0.000    |
| 316                 | 0                   | 0.00      | -0.000    |
| 317                 | 0                   | 0.17      | -0.165    |
| 318                 | 0                   | 0.00      | -0.001    |
| 319                 | 0                   | 0.03      | -0.027    |
| 320                 | 0                   | 0.00      | -0.000    |
| 321                 | 0                   | 0.00      | -0.000    |

*Continued*



**A. Table IIA.1.** Continued.

| Spp. no. (as above) | Observed in Britain | Predicted | Residuals |
|---------------------|---------------------|-----------|-----------|
| 322                 | 0                   | 0.00      | -0.002    |
| 323                 | 0                   | 0.00      | -0.000    |
| 324                 | 0                   | 0.00      | -0.000    |
| 325                 | 0                   | 0.00      | -0.001    |
| 326                 | 0                   | 0.00      | -0.000    |
| 327                 | 0                   | 0.00      | -0.001    |
| 328                 | 0                   | 0.00      | -0.000    |
| 329                 | 0                   | 0.00      | -0.001    |
| 330                 | 0                   | 0.00      | -0.000    |
| 331                 | 0                   | 0.08      | -0.082    |
| 332                 | 0                   | 0.00      | -0.000    |
| 333                 | 0                   | 0.00      | -0.000    |
| 334                 | 0                   | 0.00      | -0.000    |
| 335                 | 0                   | 0.00      | -0.002    |
| 336                 | 0                   | 0.00      | -0.000    |
| 337                 | 0                   | 0.00      | -0.000    |
| 338                 | 0                   | 0.00      | -0.000    |
| 339                 | 0                   | 0.00      | -0.000    |
| 340                 | 0                   | 0.00      | -0.000    |
| 341                 | 0                   | 0.00      | -0.000    |
| 342                 | 0                   | 0.00      | -0.001    |
| 343                 | 0                   | 0.00      | -0.000    |
| 344                 | 0                   | 0.00      | -0.000    |
| 345                 | 0                   | 0.00      | -0.000    |
| 346                 | 0                   | 0.00      | -0.000    |
| 347                 | 0                   | 0.00      | -0.000    |
| 348                 | 0                   | 0.00      | -0.000    |
| 349                 | 0                   | 0.00      | -0.000    |
| 350                 | 0                   | 0.07      | -0.073    |
| 351                 | 0                   | 0.00      | -0.000    |
| 352                 | 0                   | 0.00      | -0.002    |
| 353                 | 0                   | 0.14      | -0.138    |
| 354                 | 0                   | 0.00      | -0.000    |
| 355                 | 0                   | 0.00      | -0.000    |
| 356                 | 0                   | 0.00      | -0.000    |
| 357                 | 0                   | 0.00      | -0.000    |
| 358                 | 0                   | 0.00      | -0.000    |
| 359                 | 1                   | 0.68      | 0.323     |
| 360                 | 0                   | 0.00      | -0.000    |
| 361                 | 0                   | 0.17      | -0.169    |
| 362                 | 0                   | 0.00      | -0.001    |
| 363                 | 0                   | 0.00      | -0.002    |
| 364                 | 0                   | 0.03      | -0.025    |
| 365                 | 0                   | 0.06      | -0.057    |
| 366                 | 0                   | 0.00      | -0.001    |
| 367                 | 0                   | 0.00      | -0.001    |

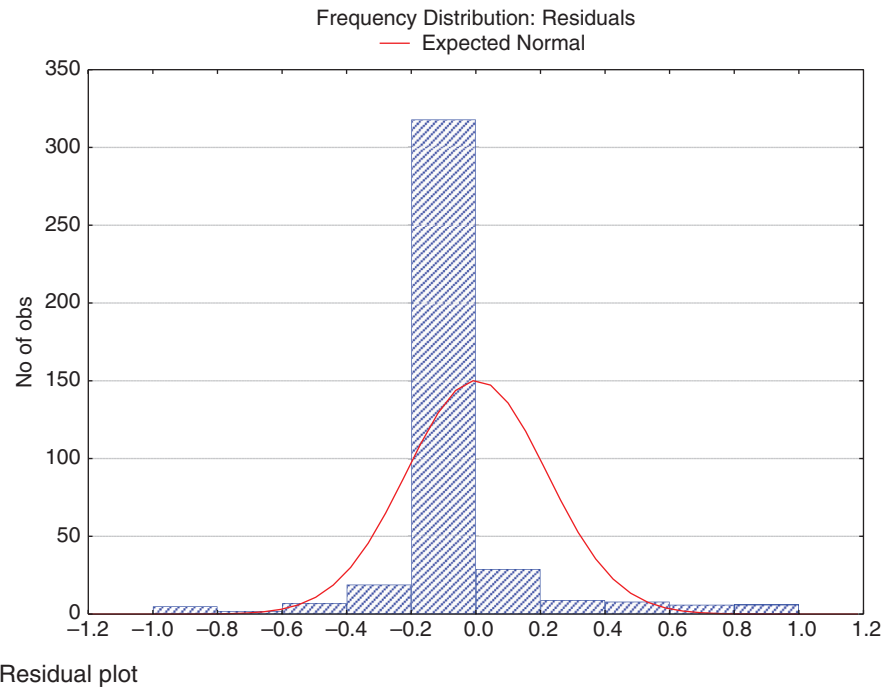
*Continued*

**A. Table IIA.1.** Continued.

| Spp. no. (as above) | Observed in Britain | Predicted | Residuals |
|---------------------|---------------------|-----------|-----------|
| 368                 | 0                   | 0.87      | -0.866    |
| 369                 | 1                   | 0.63      | 0.372     |
| 370                 | 0                   | 0.00      | -0.000    |
| 371                 | 0                   | 0.10      | -0.104    |
| 372                 | 0                   | 0.10      | -0.095    |
| 373                 | 0                   | 0.00      | -0.000    |
| 374                 | 0                   | 0.00      | -0.000    |
| 375                 | 0                   | 0.00      | -0.000    |
| 376                 | 1                   | 0.83      | 0.171     |
| 377                 | 0                   | 0.00      | -0.000    |
| 378                 | 0                   | 0.00      | -0.000    |
| 379                 | 0                   | 0.00      | -0.000    |
| 380                 | 0                   | 0.00      | -0.000    |
| 381                 | 0                   | 0.24      | -0.237    |
| 382                 | 0                   | 0.00      | -0.001    |
| 383                 | 0                   | 0.00      | -0.001    |
| 384                 | 0                   | 0.00      | -0.000    |
| 385                 | 0                   | 0.00      | -0.002    |
| 386                 | 0                   | 0.00      | -0.000    |
| 387                 | 0                   | 0.02      | -0.019    |
| 388                 | 0                   | 0.05      | -0.046    |
| 389                 | 0                   | 0.00      | -0.001    |
| 390                 | 0                   | 0.00      | -0.000    |
| 391                 | 0                   | 0.01      | -0.007    |
| 392                 | 0                   | 0.00      | -0.002    |
| 393                 | 1                   | 0.89      | 0.105     |
| 394                 | 0                   | 0.00      | -0.001    |
| 395                 | 0                   | 0.00      | -0.000    |
| 396                 | 0                   | 0.00      | -0.000    |
| 397                 | 0                   | 0.00      | -0.000    |
| 398                 | 0                   | 0.00      | -0.000    |
| 399                 | 0                   | 0.00      | -0.000    |
| 400                 | 0                   | 0.00      | -0.000    |
| 401                 | 0                   | 0.00      | -0.000    |
| 402                 | 0                   | 0.00      | -0.000    |
| 403                 | 0                   | 0.00      | -0.000    |
| 404                 | 0                   | 0.00      | -0.001    |
| 405                 | 0                   | 0.01      | -0.007    |
| 406                 | 1                   | 0.20      | 0.800     |
| 407                 | 0                   | 0.00      | -0.001    |
| 408                 | 0                   | 0.01      | -0.009    |
| 409                 | 0                   | 0.00      | -0.000    |

**Table IIA.2.** Classification of cases (BritishPredSpecies).  
Odds ratio: 68.250; percentage correct: 92.91%

| Observed | Pred.<br>0 | Pred.<br>1 | % correct |
|----------|------------|------------|-----------|
| 0        | 338        | 13         | 96.296    |
| 1        | 16         | 42         | 72.414    |



**Table IIA.3.** Model: Logistic regression (logit) N of 0's: 351 1's: 58 (BritishPredSpecies).  
Final loss: 64.02,  $\text{Chi}^2_{(1)} = 205.9$ ,  $P < 0.0001$

|                      | Const.B0 | tPCA1    |
|----------------------|----------|----------|
| Estimate             | -5.39563 | -4.04057 |
| Odds ratio (unit ch) | 0.00454  | 0.01759  |
| Odds ratio (range)   |          | 0.00000  |

(i) Continental species predicted to occur as residents in the British Isles  
( $n = 13$ )

*Pyrgus alveus*  
*Aporia crataegi*  
*Pontia daplidice*  
*Cyaniris semiargus*  
*Glaucopsyche alexis*  
*Lycaena hippothoe*  
*Lycaena virgaureae*  
*Plebejus idas*  
*Argynnis niobe*  
*Brenthis ino*  
*Issoria lathonia*  
*Nymphalis antiopa*  
*Lasiommata maera*

(ii) British resident species predicted *not* to occur in the British Isles  
( $n = 16$ )

*Thymelicus acteon*  
*Thymelicus sylvestris*  
*Aricia agestis*  
*Hamearis lucina*  
*Phengaris arion*  
*Polyommatus bellargus*  
*Polyommatus coridon*  
*Satyrrium pruni*  
*Thecla betulae*  
*Apatura iris*  
*Euphydryas aurinia*  
*Limenitis camilla*  
*Melitaea cinxia*  
*Erebia aethiops*  
*Erebia epiphron*  
*Pyronia tithonus*

All the species in (ii) excepting the two *Erebias* are predicted to occur in Britain in the following analysis based on *all* British species, which includes rare migrants.

**B. Table IIB.1.** Predictions (BritishPredSpecies).  
Dependent Variable: Britain - All species including rare migrants

| Spp. no. (as above) | Observed | Predicted | Residuals |
|---------------------|----------|-----------|-----------|
| 1                   | 0        | 0.00      | -0.00     |
| 2                   | 1        | 0.64      | 0.36      |
| 3                   | 0        | 0.04      | -0.04     |
| 4                   | 0        | 0.46      | -0.46     |
| 5                   | 0        | 0.17      | -0.17     |
| 6                   | 0        | 0.05      | -0.05     |
| 7                   | 0        | 0.00      | -0.00     |
| 8                   | 1        | 0.80      | 0.20      |
| 9                   | 0        | 0.13      | -0.13     |
| 10                  | 0        | 0.01      | -0.01     |
| 11                  | 1        | 0.92      | 0.08      |
| 12                  | 0        | 0.07      | -0.07     |
| 13                  | 0        | 0.04      | -0.04     |
| 14                  | 1        | 0.91      | 0.09      |
| 15                  | 1        | 0.53      | 0.47      |
| 16                  | 1        | 0.93      | 0.07      |
| 17                  | 0        | 0.00      | -0.00     |
| 18                  | 0        | 0.82      | -0.82     |
| 19                  | 0        | 0.12      | -0.12     |
| 20                  | 1        | 0.54      | 0.46      |
| 21                  | 0        | 0.02      | -0.02     |
| 22                  | 0        | 0.02      | -0.02     |
| 23                  | 0        | 0.00      | -0.00     |
| 24                  | 0        | 0.37      | -0.37     |
| 25                  | 0        | 0.10      | -0.10     |
| 26                  | 0        | 0.07      | -0.07     |
| 27                  | 0        | 0.14      | -0.14     |
| 28                  | 1        | 0.90      | 0.10      |
| 29                  | 0        | 0.05      | -0.05     |
| 30                  | 0        | 0.46      | -0.46     |
| 31                  | 0        | 0.11      | -0.11     |
| 32                  | 0        | 0.01      | -0.01     |
| 33                  | 0        | 0.06      | -0.06     |
| 34                  | 0        | 0.01      | -0.01     |
| 35                  | 0        | 0.33      | -0.33     |
| 36                  | 0        | 0.00      | -0.00     |
| 37                  | 0        | 0.01      | -0.01     |
| 38                  | 0        | 0.22      | -0.22     |
| 39                  | 0        | 0.04      | -0.04     |
| 40                  | 1        | 0.56      | 0.44      |
| 41                  | 0        | 0.01      | -0.01     |
| 42                  | 1        | 0.86      | 0.14      |
| 43                  | 1        | 0.74      | 0.26      |
| 44                  | 0        | 0.00      | -0.00     |
| 45                  | 1        | 0.74      | 0.26      |
| 46                  | 0        | 0.04      | -0.04     |

*Continued*

**B. Table IIB.1.** Continued.

| Spp. no. (as above) | Observed | Predicted | Residuals |
|---------------------|----------|-----------|-----------|
| 47                  | 0        | 0.00      | -0.00     |
| 48                  | 1        | 0.93      | 0.07      |
| 49                  | 1        | 0.53      | 0.47      |
| 50                  | 0        | 0.46      | -0.46     |
| 51                  | 1        | 0.01      | 0.99      |
| 52                  | 0        | 0.01      | -0.01     |
| 53                  | 0        | 0.02      | -0.02     |
| 54                  | 0        | 0.00      | -0.00     |
| 55                  | 1        | 0.12      | 0.88      |
| 56                  | 1        | 0.03      | 0.97      |
| 57                  | 1        | 0.96      | 0.04      |
| 58                  | 0        | 0.01      | -0.01     |
| 59                  | 0        | 0.04      | -0.04     |
| 60                  | 0        | 0.01      | -0.01     |
| 61                  | 1        | 0.92      | 0.08      |
| 62                  | 1        | 0.51      | 0.49      |
| 63                  | 0        | 0.00      | -0.00     |
| 64                  | 0        | 0.01      | -0.01     |
| 65                  | 0        | 0.03      | -0.03     |
| 66                  | 1        | 0.89      | 0.11      |
| 67                  | 0        | 0.06      | -0.06     |
| 68                  | 0        | 0.01      | -0.01     |
| 69                  | 1        | 0.62      | 0.38      |
| 70                  | 0        | 0.08      | -0.08     |
| 71                  | 1        | 0.51      | 0.49      |
| 72                  | 0        | 0.02      | -0.02     |
| 73                  | 0        | 0.01      | -0.01     |
| 74                  | 0        | 0.00      | -0.00     |
| 75                  | 1        | 0.42      | 0.58      |
| 76                  | 0        | 0.00      | -0.00     |
| 77                  | 0        | 0.02      | -0.02     |
| 78                  | 0        | 0.00      | -0.00     |
| 79                  | 0        | 0.01      | -0.01     |
| 80                  | 0        | 0.03      | -0.03     |
| 81                  | 1        | 0.21      | 0.79      |
| 82                  | 0        | 0.01      | -0.01     |
| 83                  | 1        | 0.95      | 0.05      |
| 84                  | 0        | 0.04      | -0.04     |
| 85                  | 0        | 0.04      | -0.04     |
| 86                  | 1        | 0.94      | 0.06      |
| 87                  | 1        | 0.96      | 0.04      |
| 88                  | 0        | 0.02      | -0.02     |
| 89                  | 0        | 0.06      | -0.06     |
| 90                  | 0        | 0.01      | -0.01     |
| 91                  | 0        | 0.17      | -0.17     |
| 92                  | 1        | 0.96      | 0.04      |
| 93                  | 1        | 0.95      | 0.05      |

*Continued*

**B. Table IIB.1.** Continued.

| Spp. no. (as above) | Observed | Predicted | Residuals |
|---------------------|----------|-----------|-----------|
| 94                  | 0        | 0.01      | -0.01     |
| 95                  | 0        | 0.07      | -0.07     |
| 96                  | 1        | 0.81      | 0.19      |
| 97                  | 0        | 0.01      | -0.01     |
| 98                  | 0        | 0.01      | -0.01     |
| 99                  | 0        | 0.01      | -0.01     |
| 100                 | 0        | 0.01      | -0.01     |
| 101                 | 0        | 0.01      | -0.01     |
| 102                 | 0        | 0.65      | -0.65     |
| 103                 | 0        | 0.06      | -0.06     |
| 104                 | 0        | 0.00      | -0.00     |
| 105                 | 0        | 0.00      | -0.00     |
| 106                 | 1        | 0.66      | 0.34      |
| 107                 | 0        | 0.03      | -0.03     |
| 108                 | 1        | 0.81      | 0.19      |
| 109                 | 0        | 0.03      | -0.03     |
| 110                 | 0        | 0.01      | -0.01     |
| 111                 | 0        | 0.03      | -0.03     |
| 112                 | 0        | 0.18      | -0.18     |
| 113                 | 0        | 0.02      | -0.02     |
| 114                 | 1        | 0.96      | 0.04      |
| 115                 | 1        | 0.96      | 0.04      |
| 116                 | 0        | 0.00      | -0.00     |
| 117                 | 0        | 0.01      | -0.01     |
| 118                 | 0        | 0.00      | -0.00     |
| 119                 | 0        | 0.19      | -0.19     |
| 120                 | 1        | 0.63      | 0.37      |
| 121                 | 0        | 0.07      | -0.07     |
| 122                 | 0        | 0.01      | -0.01     |
| 123                 | 1        | 0.93      | 0.07      |
| 124                 | 0        | 0.19      | -0.19     |
| 125                 | 1        | 0.91      | 0.09      |
| 126                 | 0        | 0.73      | -0.73     |
| 127                 | 0        | 0.00      | -0.00     |
| 128                 | 1        | 0.89      | 0.11      |
| 129                 | 1        | 0.81      | 0.19      |
| 130                 | 0        | 0.03      | -0.03     |
| 131                 | 0        | 0.00      | -0.00     |
| 132                 | 1        | 0.57      | 0.43      |
| 133                 | 0        | 0.07      | -0.07     |
| 134                 | 0        | 0.00      | -0.00     |
| 135                 | 0        | 0.00      | -0.00     |
| 136                 | 0        | 0.00      | -0.00     |
| 137                 | 0        | 0.06      | -0.06     |
| 138                 | 0        | 0.03      | -0.03     |
| 139                 | 1        | 0.50      | 0.50      |
| 140                 | 1        | 0.21      | 0.79      |

*Continued*

**B. Table IIB.1.** Continued.

| Spp. no. (as above) | Observed | Predicted | Residuals |
|---------------------|----------|-----------|-----------|
| 141                 | 1        | 0.50      | 0.50      |
| 142                 | 1        | 0.46      | 0.54      |
| 143                 | 0        | 0.37      | -0.37     |
| 144                 | 1        | 0.85      | 0.15      |
| 145                 | 0        | 0.01      | -0.01     |
| 146                 | 1        | 0.96      | 0.04      |
| 147                 | 0        | 0.10      | -0.10     |
| 148                 | 0        | 0.00      | -0.00     |
| 149                 | 1        | 0.71      | 0.29      |
| 150                 | 1        | 0.82      | 0.18      |
| 151                 | 0        | 0.01      | -0.01     |
| 152                 | 0        | 0.60      | -0.60     |
| 153                 | 1        | 0.65      | 0.35      |
| 154                 | 0        | 0.21      | -0.21     |
| 155                 | 0        | 0.22      | -0.22     |
| 156                 | 1        | 0.93      | 0.07      |
| 157                 | 0        | 0.39      | -0.39     |
| 158                 | 0        | 0.91      | -0.91     |
| 159                 | 0        | 0.02      | -0.02     |
| 160                 | 0        | 0.01      | -0.01     |
| 161                 | 0        | 0.01      | -0.01     |
| 162                 | 1        | 0.67      | 0.33      |
| 163                 | 0        | 0.02      | -0.02     |
| 164                 | 1        | 0.58      | 0.42      |
| 165                 | 0        | 0.00      | -0.00     |
| 166                 | 0        | 0.00      | -0.00     |
| 167                 | 0        | 0.14      | -0.14     |
| 168                 | 0        | 0.01      | -0.01     |
| 169                 | 0        | 0.23      | -0.23     |
| 170                 | 0        | 0.01      | -0.01     |
| 171                 | 1        | 0.30      | 0.70      |
| 172                 | 0        | 0.12      | -0.12     |
| 173                 | 0        | 0.09      | -0.09     |
| 174                 | 0        | 0.01      | -0.01     |
| 175                 | 0        | 0.00      | -0.00     |
| 176                 | 0        | 0.00      | -0.00     |
| 177                 | 0        | 0.03      | -0.03     |
| 178                 | 0        | 0.00      | -0.00     |
| 179                 | 0        | 0.77      | -0.77     |
| 180                 | 1        | 0.96      | 0.04      |
| 181                 | 0        | 0.00      | -0.00     |
| 182                 | 0        | 0.01      | -0.01     |
| 183                 | 0        | 0.00      | -0.00     |
| 184                 | 0        | 0.14      | -0.14     |
| 185                 | 0        | 0.45      | -0.45     |
| 186                 | 0        | 0.00      | -0.00     |

*Continued*



B. Table IIB.1. Continued.

| Spp. no. (as above) | Observed | Predicted | Residuals |
|---------------------|----------|-----------|-----------|
| 187                 | 0        | 0.43      | -0.43     |
| 188                 | 0        | 0.03      | -0.03     |
| 189                 | 0        | 0.70      | -0.70     |
| 190                 | 0        | 0.00      | -0.00     |
| 191                 | 1        | 0.51      | 0.49      |
| 192                 | 0        | 0.52      | -0.52     |
| 193                 | 1        | 0.81      | 0.19      |
| 194                 | 0        | 0.01      | -0.01     |
| 195                 | 0        | 0.00      | -0.00     |
| 196                 | 0        | 0.19      | -0.19     |
| 197                 | 0        | 0.03      | -0.03     |
| 198                 | 0        | 0.37      | -0.37     |
| 199                 | 0        | 0.01      | -0.01     |
| 200                 | 0        | 0.19      | -0.19     |
| 201                 | 0        | 0.02      | -0.02     |
| 202                 | 0        | 0.00      | -0.00     |
| 203                 | 1        | 0.76      | 0.24      |
| 204                 | 0        | 0.02      | -0.02     |
| 205                 | 0        | 0.01      | -0.01     |
| 206                 | 0        | 0.01      | -0.01     |
| 207                 | 0        | 0.00      | -0.00     |
| 208                 | 0        | 0.08      | -0.08     |
| 209                 | 1        | 0.95      | 0.05      |
| 210                 | 1        | 0.96      | 0.04      |
| 211                 | 0        | 0.72      | -0.72     |
| 212                 | 1        | 0.63      | 0.37      |
| 213                 | 0        | 0.04      | -0.04     |
| 214                 | 1        | 0.62      | 0.38      |
| 215                 | 1        | 0.89      | 0.11      |
| 216                 | 1        | 0.95      | 0.05      |
| 217                 | 0        | 0.00      | -0.00     |
| 218                 | 0        | 0.08      | -0.08     |
| 219                 | 1        | 0.80      | 0.20      |
| 220                 | 1        | 0.39      | 0.61      |
| 221                 | 1        | 0.92      | 0.08      |
| 222                 | 0        | 0.63      | -0.63     |
| 223                 | 0        | 0.01      | -0.01     |
| 224                 | 1        | 0.55      | 0.45      |
| 225                 | 0        | 0.59      | -0.59     |
| 226                 | 1        | 0.93      | 0.07      |
| 227                 | 0        | 0.14      | -0.14     |
| 228                 | 0        | 0.11      | -0.11     |
| 229                 | 0        | 0.02      | -0.02     |
| 230                 | 0        | 0.01      | -0.01     |
| 231                 | 0        | 0.28      | -0.28     |
| 232                 | 0        | 0.04      | -0.04     |

Continued

**B. Table IIB.1.** Continued.

| Spp. no. (as above) | Observed | Predicted | Residuals |
|---------------------|----------|-----------|-----------|
| 233                 | 0        | 0.01      | -0.01     |
| 234                 | 1        | 0.93      | 0.07      |
| 235                 | 0        | 0.11      | -0.11     |
| 236                 | 0        | 0.12      | -0.12     |
| 237                 | 0        | 0.45      | -0.45     |
| 238                 | 0        | 0.22      | -0.22     |
| 239                 | 0        | 0.82      | -0.82     |
| 240                 | 0        | 0.14      | -0.14     |
| 241                 | 0        | 0.10      | -0.10     |
| 242                 | 1        | 0.01      | 0.99      |
| 243                 | 1        | 0.77      | 0.23      |
| 244                 | 0        | 0.01      | -0.01     |
| 245                 | 0        | 0.01      | -0.01     |
| 246                 | 0        | 0.01      | -0.01     |
| 247                 | 0        | 0.01      | -0.01     |
| 248                 | 0        | 0.30      | -0.30     |
| 249                 | 1        | 0.89      | 0.11      |
| 250                 | 0        | 0.16      | -0.16     |
| 251                 | 1        | 0.60      | 0.40      |
| 252                 | 0        | 0.73      | -0.73     |
| 253                 | 0        | 0.42      | -0.42     |
| 254                 | 0        | 0.02      | -0.02     |
| 255                 | 0        | 0.02      | -0.02     |
| 256                 | 0        | 0.00      | -0.00     |
| 257                 | 1        | 0.91      | 0.09      |
| 258                 | 0        | 0.31      | -0.31     |
| 259                 | 0        | 0.13      | -0.13     |
| 260                 | 1        | 0.75      | 0.25      |
| 261                 | 0        | 0.04      | -0.04     |
| 262                 | 0        | 0.64      | -0.64     |
| 263                 | 1        | 0.64      | 0.36      |
| 264                 | 0        | 0.10      | -0.10     |
| 265                 | 0        | 0.63      | -0.63     |
| 266                 | 0        | 0.24      | -0.24     |
| 267                 | 0        | 0.01      | -0.01     |
| 268                 | 0        | 0.07      | -0.07     |
| 269                 | 0        | 0.06      | -0.06     |
| 270                 | 1        | 0.92      | 0.08      |
| 271                 | 0        | 0.09      | -0.09     |
| 272                 | 1        | 0.82      | 0.18      |
| 273                 | 1        | 0.20      | 0.80      |
| 274                 | 1        | 0.93      | 0.07      |
| 275                 | 0        | 0.04      | -0.04     |
| 276                 | 1        | 0.96      | 0.04      |
| 277                 | 1        | 0.96      | 0.04      |
| 278                 | 1        | 0.01      | 0.99      |

*Continued*

**B. Table IIB.1.** Continued.

| Spp. no. (as above) | Observed | Predicted | Residuals |
|---------------------|----------|-----------|-----------|
| 279                 | 1        | 0.91      | 0.09      |
| 280                 | 1        | 0.38      | 0.62      |
| 281                 | 0        | 0.42      | -0.42     |
| 282                 | 1        | 0.44      | 0.56      |
| 283                 | 0        | 0.01      | -0.01     |
| 284                 | 0        | 0.01      | -0.01     |
| 285                 | 0        | 0.70      | -0.70     |
| 286                 | 0        | 0.00      | -0.00     |
| 287                 | 0        | 0.05      | -0.05     |
| 288                 | 0        | 0.01      | -0.01     |
| 289                 | 0        | 0.52      | -0.52     |
| 290                 | 0        | 0.15      | -0.15     |
| 291                 | 0        | 0.02      | -0.02     |
| 292                 | 0        | 0.09      | -0.09     |
| 293                 | 0        | 0.00      | -0.00     |
| 294                 | 1        | 0.96      | 0.04      |
| 295                 | 0        | 0.00      | -0.00     |
| 296                 | 0        | 0.01      | -0.01     |
| 297                 | 0        | 0.00      | -0.00     |
| 298                 | 1        | 0.85      | 0.15      |
| 299                 | 0        | 0.00      | -0.00     |
| 300                 | 1        | 0.31      | 0.69      |
| 301                 | 1        | 0.01      | 0.99      |
| 302                 | 0        | 0.00      | -0.00     |
| 303                 | 0        | 0.04      | -0.04     |
| 304                 | 0        | 0.00      | -0.00     |
| 305                 | 0        | 0.00      | -0.00     |
| 306                 | 0        | 0.02      | -0.02     |
| 307                 | 0        | 0.05      | -0.05     |
| 308                 | 1        | 0.13      | 0.87      |
| 309                 | 0        | 0.01      | -0.01     |
| 310                 | 0        | 0.00      | -0.00     |
| 311                 | 0        | 0.09      | -0.09     |
| 312                 | 0        | 0.00      | -0.00     |
| 313                 | 0        | 0.05      | -0.05     |
| 314                 | 0        | 0.00      | -0.00     |
| 315                 | 0        | 0.00      | -0.00     |
| 316                 | 0        | 0.00      | -0.00     |
| 317                 | 1        | 0.54      | 0.46      |
| 318                 | 0        | 0.03      | -0.03     |
| 319                 | 0        | 0.22      | -0.22     |
| 320                 | 0        | 0.01      | -0.01     |
| 321                 | 0        | 0.01      | -0.01     |
| 322                 | 0        | 0.05      | -0.05     |
| 323                 | 0        | 0.00      | -0.00     |
| 324                 | 0        | 0.01      | -0.01     |

*Continued*

**B. Table IIB.1.** Continued.

| Spp. no. (as above) | Observed | Predicted | Residuals |
|---------------------|----------|-----------|-----------|
| 325                 | 0        | 0.02      | -0.02     |
| 326                 | 0        | 0.00      | -0.00     |
| 327                 | 0        | 0.02      | -0.02     |
| 328                 | 0        | 0.00      | -0.00     |
| 329                 | 0        | 0.02      | -0.02     |
| 330                 | 0        | 0.00      | -0.00     |
| 331                 | 0        | 0.40      | -0.40     |
| 332                 | 0        | 0.01      | -0.01     |
| 333                 | 0        | 0.01      | -0.01     |
| 334                 | 0        | 0.01      | -0.01     |
| 335                 | 0        | 0.04      | -0.04     |
| 336                 | 0        | 0.00      | -0.00     |
| 337                 | 0        | 0.00      | -0.00     |
| 338                 | 0        | 0.00      | -0.00     |
| 339                 | 0        | 0.00      | -0.00     |
| 340                 | 0        | 0.00      | -0.00     |
| 341                 | 0        | 0.01      | -0.01     |
| 342                 | 0        | 0.03      | -0.03     |
| 343                 | 0        | 0.00      | -0.00     |
| 344                 | 0        | 0.00      | -0.00     |
| 345                 | 0        | 0.00      | -0.00     |
| 346                 | 0        | 0.00      | -0.00     |
| 347                 | 0        | 0.00      | -0.00     |
| 348                 | 0        | 0.00      | -0.00     |
| 349                 | 0        | 0.00      | -0.00     |
| 350                 | 1        | 0.38      | 0.62      |
| 351                 | 0        | 0.01      | -0.01     |
| 352                 | 0        | 0.04      | -0.04     |
| 353                 | 0        | 0.50      | -0.50     |
| 354                 | 0        | 0.00      | -0.00     |
| 355                 | 0        | 0.00      | -0.00     |
| 356                 | 0        | 0.00      | -0.00     |
| 357                 | 0        | 0.01      | -0.01     |
| 358                 | 0        | 0.00      | -0.00     |
| 359                 | 1        | 0.87      | 0.13      |
| 360                 | 0        | 0.01      | -0.01     |
| 361                 | 0        | 0.55      | -0.55     |
| 362                 | 0        | 0.03      | -0.03     |
| 363                 | 0        | 0.04      | -0.04     |
| 364                 | 0        | 0.22      | -0.22     |
| 365                 | 0        | 0.34      | -0.34     |
| 366                 | 0        | 0.02      | -0.02     |
| 367                 | 0        | 0.02      | -0.02     |
| 368                 | 1        | 0.94      | 0.06      |
| 369                 | 1        | 0.85      | 0.15      |
| 370                 | 0        | 0.00      | -0.00     |

*Continued*

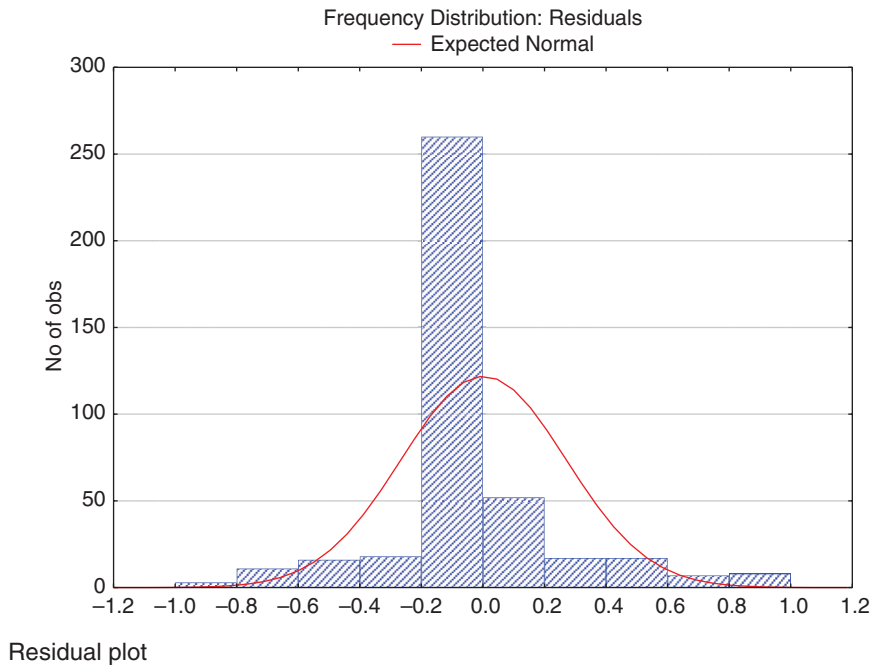
**B. Table IIB.1.** Continued.

| Spp. no. (as above) | Observed | Predicted | Residuals |
|---------------------|----------|-----------|-----------|
| 371                 | 0        | 0.45      | -0.45     |
| 372                 | 0        | 0.43      | -0.43     |
| 373                 | 0        | 0.00      | -0.00     |
| 374                 | 0        | 0.00      | -0.00     |
| 375                 | 0        | 0.00      | -0.00     |
| 376                 | 1        | 0.92      | 0.08      |
| 377                 | 0        | 0.00      | -0.00     |
| 378                 | 0        | 0.00      | -0.00     |
| 379                 | 0        | 0.00      | -0.00     |
| 380                 | 0        | 0.01      | -0.01     |
| 381                 | 1        | 0.62      | 0.38      |
| 382                 | 0        | 0.02      | -0.02     |
| 383                 | 0        | 0.02      | -0.02     |
| 384                 | 0        | 0.02      | -0.02     |
| 385                 | 0        | 0.04      | -0.04     |
| 386                 | 0        | 0.00      | -0.00     |
| 387                 | 0        | 0.18      | -0.18     |
| 388                 | 0        | 0.30      | -0.30     |
| 389                 | 0        | 0.02      | -0.02     |
| 390                 | 0        | 0.01      | -0.01     |
| 391                 | 0        | 0.10      | -0.10     |
| 392                 | 0        | 0.04      | -0.04     |
| 393                 | 1        | 0.95      | 0.05      |
| 394                 | 0        | 0.02      | -0.02     |
| 395                 | 0        | 0.00      | -0.00     |
| 396                 | 0        | 0.01      | -0.01     |
| 397                 | 0        | 0.00      | -0.00     |
| 398                 | 0        | 0.00      | -0.00     |
| 399                 | 0        | 0.00      | -0.00     |
| 400                 | 0        | 0.00      | -0.00     |
| 401                 | 0        | 0.00      | -0.00     |
| 402                 | 0        | 0.00      | -0.00     |
| 403                 | 0        | 0.00      | -0.00     |
| 404                 | 0        | 0.03      | -0.03     |
| 405                 | 0        | 0.10      | -0.10     |
| 406                 | 1        | 0.58      | 0.42      |
| 407                 | 0        | 0.03      | -0.03     |
| 408                 | 0        | 0.11      | -0.11     |
| 409                 | 0        | 0.00      | -0.00     |

**Table IIB.2.** Classification of cases (BritishPredSpecies).

Odds ratio: 61.60; percentage correct: 90.46%

| Observed | Pred.<br>0 | Pred.<br>1 | % correct |
|----------|------------|------------|-----------|
| 0        | 289        | 19         | 93.831    |
| 1        | 20         | 81         | 80.198    |

**Table IIB.3.** Model: Logistic regression (logit) N of 0's: 308 1's: 101 (BritishPredSpecies).Final loss: 102.95,  $\text{Chi}^2_{(1)} = 251.33$ ,  $P < 0.0001$ 

|                      | Const.B0 | tPCA1    |
|----------------------|----------|----------|
| Estimate             | -2.54830 | -2.90737 |
| Odds ratio (unit ch) | 0.07821  | 0.05462  |
| Odds ratio (range)   |          | 0.00003  |

*Lycaena dispar* (not entered into the equation as present in Britain) is not predicted to occur in the British Isles in either analysis based on British residents or ALL British species.