

DATA REPOSITORY ITEM 2006083

APPENDIX DR 1: SUPPLEMENTARY INFORMATION TO DISTRIBUTIONAL AND ECOPHYSIOLOGIC DATA

Distributional and ecophysiological data are obtained from the following references and databases: Balletto et al. 1985; Emms and Barnett 2005; Engelmann et al. 1993; Hussein and Darwish 2001; Kuzmin 1995; Raxworthy and Attuquayefio 2000; Rödel and Agyei 2002; Schleich et al. 1996; Spawls et al. 2002; Stuart 1999; China Species Information Service (CSIS) www.chinabiodiversity.com/search/english/searchwwf.shtm; The EMBL Reptile Database www.embl.heidelberg.de/~uetz/LivingReptiles.html; AmphibiaWeb <http://elib.cs.berkeley.edu/aw/index.html>.

APPENDIX DR 2: CLIMATE DATA SOURCES

Precipitation data are from Müller and Hennings 2005 and from the NOAA Satellite and Information Service, National Climatic Data Center.

APPENDIX DR 3: SELECTED CLIMATE STATIONS AND CELLS

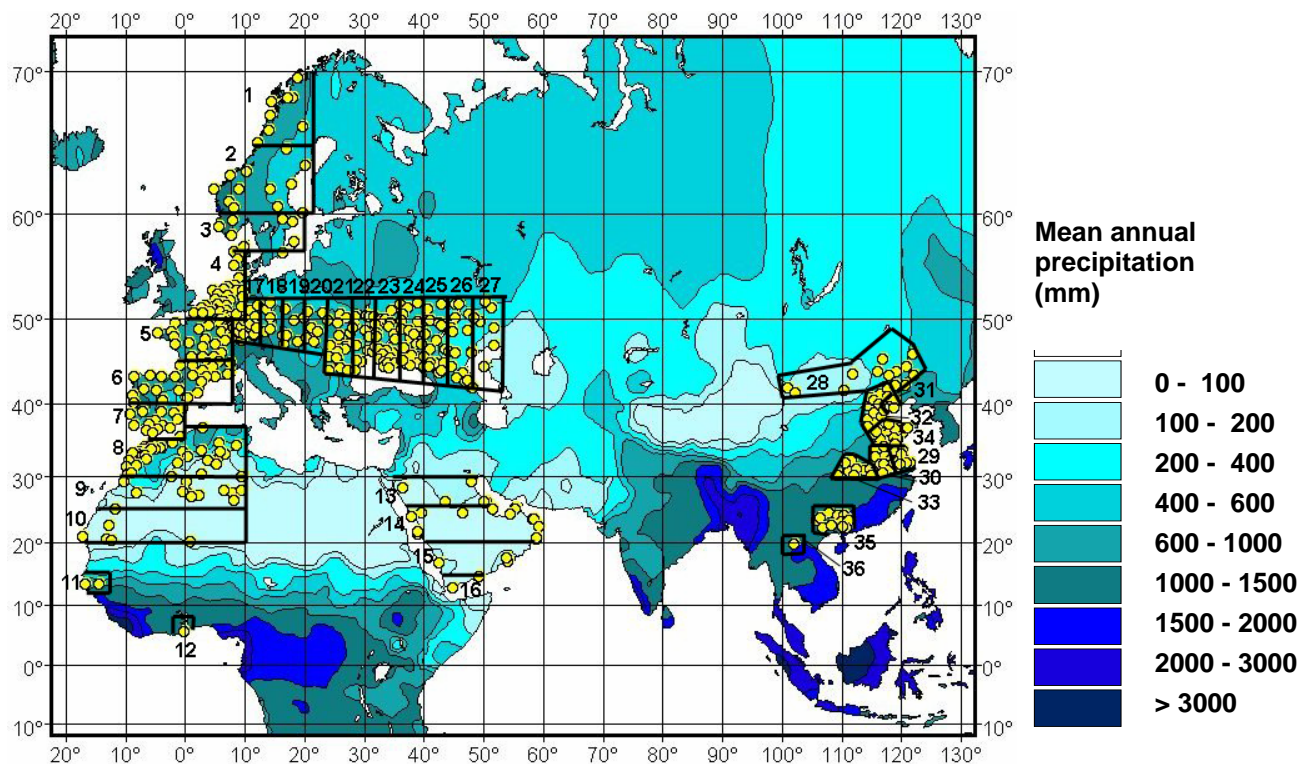


Figure DR 1: Mean annual precipitation map (data from Deichmann and Eklundh, 1991), the position of cells (numbered 1 to 36) and the 469 selected climate stations (yellow dots).

APPENDIX DR 4: STRATIGRAPHIC, CHRONOLOGIC AND FOSSIL DATA

To apply the new method to the geological past we chose two time slices from the European Neogene; the earliest Middle Miocene (early Langhian, magnetic chron C5Br, 15.97 to 15.16 m.y., middle part of the mammalian “zone” MN5; chronology hereafter is recalibrated using the GTS2004 and the ATNTS2004 scales, Gradstein et al. 2004) and the early Late Miocene (early Tortonian, ~10.3 to 9.7 m.y., late mammalian “zone” MN9, earliest MN10). For the Middle Miocene we selected from the Calatayud-Daroca Basin the localities La Col C, Moratilla 2, and Villafeliche 4A, dated bio-magnetostratigraphically to 15.89, 15.81, and 15.51 m.y. respectively (Daams et al. 1999). From the North Alpine Foreland Basin we choose the localities Sandelzhausen, Walda 1, and Walda 2, dated bio-magnetostratigraphically and by regional cyclostratigraphic correlation to ~15.7, ~15.5, and ~15.3 m.y. respectively (Zwing et al. 2005, in progress). For the Late Miocene we selected from the Teruel Basin the localities Cascante 4, Masia de la Roma 3 and Masia de la Roma 4B, dated bio-magnetostratigraphically and astrochronologically to 10.1, 9.8, and 9.7 m.y. respectively (Abdul-Aziz et al. 2004, van Dam et al. 2001) and from the Western and Central Paratethys area the localities Hammerschmiede, Götzendorf, and Rudabanya, dated bio-magnetostratigraphically and by biostratigraphic correlation to ~10.3, ~9.8, and ~10.0-9.8 m.y. respectively (Bernor et al. 2004, Daxner-Höck 2001). For a distribution map see Figure DR2.

The fossil data are extracted from the following literature and data-bases: Böhme and Ilg 2003 (La Col C, Moratilla 2, and Villafeliche 4A, Cascante 4, Masia de la Roma 3 and Masia de la Roma 4B), Böhme 2003, 1999, Schleich 1985 (Sandelzhausen, Walda 1, Walda 2, Hammerschmiede), Bernor et al. 2004 (Rudabanya), Tempfer 2002, Rögl et al. 1993 (Götzendorf). The fossil record of all localities was verified by the first author on the original material.

APPENDIX DR 5: OUTPUT FROM THE REGRESSION ANALYSIS

Equation # 4

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,940(a)	,884	,864	129,52742

a Predictors: (Constant), group6, group3, group5, group2, group4

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3817960,097	5	763592,019	45,513	,000(a)
	Residual	503320,562	30	16777,352		
	Total	4321280,659	35			

a Predictors: (Constant), group6, group3, group5, group2, group4

b Dependent Variable: MAP

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-35,646	66,078		-,539	,594
	group2	220,300	438,008	,036	,503	,619
	group3	941,288	174,965	,470	5,380	,000
	group4	1232,452	479,241	,322	2,572	,015
	group5	2346,574	553,721	,391	4,238	,000
	group6	2402,289	772,601	,266	3,109	,004

a Dependent Variable: MAP

Equation # 6

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	,940(a)	,884	,880	121,66982

a Predictors: (Constant), index

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3817960,094	1	3817960,094	257,908	,000(a)
	Residual	503320,565	34	14803,546		
	Total	4321280,659	35			

a Predictors: (Constant), index

b Dependent Variable: MAP

Coefficients(a)

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	-35,641	44,305		-,804	,427
	index	2402,390	149,593	,940	16,060	,000

a Dependent Variable: MAP

APPENDIX DR 6: DISTRIBUTION OF AMPHIBIANS AND REPTILES IN CELL NUMBER 1 TO 36

Table DR 1: Distribution of amphibians and reptiles in cell number 1 to 10 (see figure DR1), their ecophysiological coding, and the ecophysiological index of each cell.

cell number										Species
1	2	3	4	5	6	7	8	9	10	
					0,9768					<i>Chioglossa lusitanica</i>
					0,513					<i>Euproctus asper</i>
					1	1	1			<i>Pleurodeles waltl</i>
			0,3918	0,3918	0,3918	0,3918				<i>Salamandra salamandra</i>
							0,3918			<i>S. algira</i>
					0,9768					<i>Salamandrina terdigitata</i>
			0,513	0,513	0,513					<i>Triturus alpestris</i>
					0,513	0,513				<i>T. boscai</i>
		0,3918	0,3918	0,3918	0,3918					<i>T. helveticus</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918					<i>T. vulgaris</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918					<i>T. cristatus</i>
				0,513	0,513	0,513				<i>T. marmoratus</i>
					0,3918	0,3918				<i>Alytes cisternasii</i>
				0,3918	0,3918	0,3918	0,3918			<i>A. obstreticans</i>
			0,3918	0,3918						<i>Bombina bombina</i>
			0,3918	0,3918	0,3918					<i>B. variegata</i>
					0,3918	0,3918				<i>Discoglossus garganoi</i>
						0,3918				<i>D. jeanneae</i>
						0,3918	0,3918			<i>D. pictus</i>
								0,0917		<i>Pelobates varaldii</i>
					0,0917	0,0917				<i>P. cultripes</i>
		0,0917	0,0917	0,0917						<i>P. fuscus</i>
			0,3918	0,3918	0,3918	0,3918				<i>Pelodytes punctatus</i>
								0,3918		<i>Bufo brongersmai</i>
								0,0917	0,0917	<i>B. mauritanicus</i>
								0,3918	0,3918	<i>B. regularis</i>
								0,3918		<i>B. xeros</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918			<i>B. bufo</i>
		0,3918	0,3918	0,3918	0,3918	0,3918				<i>B. calamita</i>
		0	0	0	0	0	0	0	0	<i>B. viridis</i>
		0,3918	0,3918	0,3918	0,3918	0,3918				<i>Hyla arborea</i>
					0,3918	0,3918	0,3918			<i>H. meridionalis</i>
0,513	0,513	0,513	0,513	0,513						<i>Rana arvalis</i>
		0,3918	0,3918	0,3918	0,3918					<i>R. dalmatina</i>
					0,3918					<i>R. iberica</i>
					0,3918					<i>R. latastei</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918					<i>R. temporaria</i>
		0,513	0,513	0,513						<i>R. lessonae</i>
					0,513	0,513				<i>R. perezi</i>
			0,513	0,513			0,513	0,513		<i>R. saharica</i>
										<i>R. ridibunda</i>
						0	0			<i>Testudo graeca</i>
						0				<i>T. herrmanni</i>
			1	1	1	1	1			<i>Emys orbicularis</i>
						1	1			<i>Mauremys leprosa</i>
								0	0	<i>Geckonia chazaliae</i>
					0	0	0			<i>Hemidactylus turquicus</i>
							0	0		<i>Ptyodactylus oudrii</i>
								0	0	<i>P. ragazzii</i>
							0			<i>Quedenfeldtia trachyblepharus</i>
							0			<i>Saurodactylus fasciatus</i>
							0			<i>S. mauritanicus</i>
							0	0		<i>Stenodactylus petrii</i>
							0	0	0	<i>St. stenodactylus</i>
								0	0	<i>Tarentola annularis</i>
							0			<i>T. boehmei</i>
							0			<i>T. deserti</i>

Table DR 1 (cont.)

cell number										Species
1	2	3	4	5	6	7	8	9	10	
								0	0	<i>Tarentola ephippiata</i>
							0			<i>T. mauretana</i>
							0	0		<i>T. neglecta</i>
						0	0	0	0	<i>Tropicolotes steudneri</i>
						0	0			<i>T. algericus</i>
								0	0	<i>T. occidentalis</i>
						0	0	0	0	<i>Agama impalearis</i>
						0	0			<i>Trapelus mutabilis</i>
							0			<i>T. tournevillei</i>
							0	0	0	<i>Uromastyx acanthinura</i>
									0	<i>U. geyri</i>
					0					<i>Phyllodactylos europeus</i>
					0	0	0			<i>Tarantula mauritanica</i>
						0,0917	0,0917	0,0917		<i>Chamaeleo chamaeleo</i>
							0	0	0	<i>Varanus griseus</i>
							0			<i>Ophisaurus kollikeri</i>
	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917				<i>Anguis fragilis</i>
								0	0	<i>Acanthodactylus aureus</i>
						0	0	0	0	<i>A. scutellatus</i>
						0	0	0	0	<i>A. pardalis</i>
						0				<i>A. savignyi</i>
						0				<i>A. blancei</i>
						0	0	0		<i>A. boskianus</i>
						0	0			<i>A. erythrurus</i>
						0				<i>Algyroides marchi</i>
							0			<i>Ophisops occidentalis</i>
							0			<i>O. elegans</i>
						0	0	0	0	<i>Mesalina rubropunctata</i>
							0			<i>M. simoni</i>
						0	0			<i>M. oliveri</i>
								0	0	<i>M. pasteuri</i>
						0	0	0	0	<i>M. guttulata</i>
						0	0			<i>Lacerta pater</i>
							0			<i>L. andreanskyi</i>
	0	0	0	0	0					<i>L. agilis</i>
					0	0				<i>L. schreiberi</i>
			0	0	0					<i>L. viridis</i>
					0	0				<i>L. lepida</i>
					0					<i>L. monticola</i>
0	0	0	0	0	0	0	0			<i>L. vivipara</i>
						0	0			<i>Podarcis hispanica</i>
					0	0				<i>P. bocagei</i>
				0	0					<i>P. mualis</i>
						0	0			<i>P. perspicillata</i>
						0				<i>P. sicula</i>
						0	0			<i>Psammodromus algirus</i>
						0	0			<i>P. hispanicus</i>
							0			<i>P. blanci</i>
							0	0		<i>P. microdactylus</i>
									0	<i>Sphenops delislei</i>
								0	0	<i>S. sphenopsiforme</i>
						0	0			<i>S. boulengeri</i>
							0			<i>Scincus scincus</i>
							0		0	<i>Scincopus fasciatus</i>
							0			<i>Mabuya vittata</i>
						0	0			<i>Eumeces algeriensis</i>
						0	0			<i>E. schneiderii</i>

Table DR 1 (cont.)

cell number										Species
1	2	3	4	5	6	7	8	9	10	
									0	<i>Chalcides ragazzii</i>
						0	0	0		<i>C. polylepis</i>
							0			<i>C. manueli</i>
							0			<i>C. ontanus</i>
							0			<i>C. lanzai</i>
						0				<i>C. ghiarai</i>
						0				<i>C. ebneri</i>
						0				<i>C. colosii</i>
						0	0			<i>C. mionecton</i>
							0			<i>C. mauritanicus</i>
					0	0				<i>C. bedriagai</i>
					0	0	0			<i>C. chalcides</i>
							0	0	0	<i>C. ocellatus</i>
									1	<i>Crocodylus niloticus</i>
							0,0917			<i>Trogonophis wiegmanni</i>
							0,0917			<i>Blanus mettetalii</i>
						0,0917				<i>B. tingitanus</i>
					0,0917	0,0917				<i>B. cinereus</i>
							0,0917	0,0917	0,0917	<i>Leptotyphlops macrorhynchus</i>
0,3467	0,2715	0,2896	0,3451	0,3401	0,3129	0,1526	0,0873	0,0614	0,0571	ecophysiological index

Table DR 2: Distribution of amphibians and reptiles in cell number 11 and 12 (see figure DR1), their ecophysiological coding, and the ecophysiological index of each cell.

cell number		Species
11	12	
0,3918	0,3918	<i>Bufo regularis</i>
0,3918	0,3918	<i>B. maculatus</i>
0,3918		<i>B. pentoni</i>
0,3918		<i>B. xeros</i>
0,3918		<i>Hemisis marmoratus</i>
0,3918		<i>Hildebrandtia ornata</i>
0,3918		<i>Pyxicephalus edulis</i>
0,3918		<i>Arthroleptis cf. poecilnotus</i>
	0,3918	<i>Afrivalus dorsalis</i>
0,3918		<i>A. fulvovittatus</i>
0,3918		<i>A. vittiger</i>
0,3918		<i>A. weidholzi</i>
0,3918	0,3918	<i>Hyperolius concolor</i>
	0,3918	<i>H. nasutus</i>
0,3918		<i>H. nitidulus</i>
0,3918		<i>H. occidentalis</i>
0,3918	0,3918	<i>Kassina senegalensis</i>
0,3918		<i>K. cassioides</i>
0,3918		<i>K. fusca</i>
0,3918		<i>Leptopelis bufonides</i>
0,3918		<i>L. viridis</i>
0,3918	0,3918	<i>Phrynomantis microps</i>
0,513	0,513	<i>Hoplobatrachus occipitalis</i>
0,513	0,513	<i>Amnirana galamensis</i>
	0,3918	<i>Phrynobatrachus accraensis</i>
0,513	0,513	<i>P. calcaratus</i>

Table DR 2 (cont.)

cell number		Species
11	12	
0,3918		<i>Phrynobatrachus francisci</i>
0,3918		<i>P. latifrons</i>
0,513		<i>P. natalensis</i>
0,3918	0,3918	<i>Ptychadena longirostris</i>
0,3918	0,3918	<i>P. oxyrhynchus</i>
0,513		<i>P. bibroni</i>
0,513		<i>P. pumilio</i>
0,513		<i>P. tournieri</i>
0,3918		<i>P. trinodis</i>
0,513	0,513	<i>Pelomedusa subrufa</i>
1		<i>Pelusios adansonii</i>
0,513		<i>P. c. castanooides</i>
1		<i>Mauremys leprosa</i>
	0	<i>Kinixys homeana</i>
0		<i>K. belliana nogueyi</i>
0		<i>K. erosa</i>
1		<i>Cyclanorbis senegalensis</i>
1		<i>Trionyx triunguis</i>
1		<i>Crocodylus cataphractus</i>
1		<i>C. niloticus</i>
1		<i>Osteolaemus t. tetraspis</i>
0,0917		<i>Leptotyphlops narirostris</i>
0,0917		<i>Rhinoleptus koniagui</i>
0,0917		<i>Typhlops punctatus</i>
0,0917		<i>Cynisca feae</i>
0,0917		<i>Chamaeleo gracilis etienni</i>
0,0917		<i>C. senegalensis</i>
0	0	<i>Agama agama</i>
0		<i>A. weidholzi</i>
0	0	<i>Hemidactylus brookii</i>
0		<i>H. f. fasciatus</i>
0	0	<i>H. mabouia</i>
0		<i>Hemitheconyx caudicinctus</i>
0	0	<i>Lygodactylus conraui</i>
0		<i>L. gutturalis</i>
0		<i>Tarentola annularis</i>
0		<i>T. ephippiata</i>
0		<i>Chalcides armitagei</i>
0,0917		<i>Leptosiaphis nimbaense</i>
0	0	<i>Mabuja affinis</i>
0	0	<i>Mabuja perrotanii</i>
	0	<i>Panaspis togoensis</i>
0	0	<i>Varanus exanthematicus</i>
0,3918	0,3918	<i>V. niloticus</i>
0,3453	0,2651	ecophysilogic index

Table DR 3: Distribution of amphibians and reptiles in cell number 13 to 16 (see figure DR1), their ecophysiological coding, and the ecophysiological index of each cell.

cell number 13	14	15	16	Species
0	0	0		<i>Bufo viridis</i>
		0,3918	0,3918	<i>B. tihamicus</i>
		0,3918		<i>B. scortecci</i>
			0,2	<i>B. hadramauntinus</i>
0,3918	0,3918	0,3918	0,3918	<i>B. arabicus</i>
	0,2	0,2	0,2	<i>B. dhufarensis</i>
0,513	0,513	0,513		<i>Rana ridibunda</i>
	0,513	0,513	0,513	<i>Euphlyctis ehrenbergii</i>
	0	0		<i>Agama savignyi</i>
0	0	0		<i>Phrynocephalus arabicus</i>
0	0	0		<i>P. maculatus</i>
0	0	0		<i>Laudakia stellio</i>
0	0	0		<i>Pseudotrapelus sinaitus</i>
	0	0		<i>Trapelus flavimaculatus</i>
0				<i>T. haasi</i>
0				<i>T. blanfordi</i>
	0	0		<i>T. jayakari</i>
0	0	0		<i>T. mutabilis</i>
0				<i>T. ruderatus</i>
	0	0		<i>T. pallidus</i>
		0	0	<i>Acanthocercus adramitanus</i>
		0	0	<i>A. cyanogaster</i>
		0	0	<i>A. yemenensis</i>
	0	0	0	<i>Uromastyx benti</i>
	0	0		<i>U. thomasi</i>
	0	0		<i>U. leptieni</i>
0	0	0		<i>U. aegyptica</i>
	0	0		<i>U. microlepis</i>
	0	0	0	<i>U. philbyi</i>
0	0			<i>U. ornata</i>
0,0917	0,0917	0,0917		<i>Diplomepodon zarudnyi</i>
		0,0917	0,0917	<i>Agamodon arabicus</i>
	0,0917	0,0917	0,0917	<i>Chamaeleo arabicus</i>
		0,0917	0,0917	<i>Ch. Calcarifer</i>
		0,0917	0,0917	<i>Ch. Calyptratus</i>
		0,0917	0,0917	<i>Ch. Chamaeleon</i>
	0	0		<i>Alsophylax tuberculatus</i>
	0			<i>Asaccus caudivolvulus</i>
	0	0		<i>A. galagherii</i>
	0			<i>A. platyrhynchus</i>
	0			<i>A. montanus</i>
	0	0	0	<i>Bunopus spatalurus</i>
0	0	0		<i>B. tuberculatus</i>
0	0	0		<i>Cyrtopodion scabrum</i>
		0	0	<i>Hemidactylus sinaitus</i>
	0	0		<i>H. turcicus</i>
0	0	0		<i>H. persicus</i>
	0	0		<i>H. leschenaulti</i>
		0		<i>H. lemurinus</i>
	0	0		<i>H. homeolepis</i>
0	0	0		<i>H. flaviviridis</i>
	0	0	0	<i>H. yerburyi</i>
	0	0		<i>Gymnodactylus saber</i>
	0	0	0	<i>Pristurus carteri</i>
			0	<i>P. collaris</i>
0	0	0		<i>P. rupestris</i>
	0	0		<i>P. minimus</i>
	0			<i>P. gasparetti</i>
	0	0		<i>P. celerrimus</i>
0				<i>P. flavipunctatus</i>

Table DR 3 (cont.)

cell number				Species
13	14	15	16	
		0	0	<i>Pristurus crucifer</i>
		0	0	<i>P. ornithocephalus</i>
		0	0	<i>P. popovi</i>
		0		<i>P. saada</i>
0	0	0		<i>Ptyodactylus hasselquisti</i>
	0	0		<i>Stenodactylus leptocosymbotus</i>
	0			<i>S. khobarensis</i>
0				<i>S. grandiceps</i>
0	0	0		<i>S. doriae</i>
0	0	0		<i>S. arabicus</i>
		0	0	<i>S. pulcher</i>
0	0	0	0	<i>S. slevini</i>
0	0	0		<i>S. stenodactylus</i>
		0	0	<i>S. yemenensis</i>
	0	0		<i>Teratoscincus keyserlingi</i>
	0	0	0	<i>Tropicolotes scortecci</i>
0				<i>T. nattereri</i>
			0	<i>Acanthodactylus arabicus</i>
	0			<i>A. blanfordii</i>
0	0	0		<i>A. boskianus</i>
	0			<i>A. gongrorhynchatus</i>
0				<i>A. grandis</i>
		0	0	<i>A. felicis</i>
0	0	0		<i>A. schmidtii</i>
0				<i>A. scutellatus</i>
0				<i>A. hardyi</i>
0	0	0	0	<i>A. opheodurus</i>
0				<i>A. robustus</i>
0	0			<i>A. haasi</i>
		0	0	<i>A. yemenicus</i>
	0			<i>A. tilburyi</i>
		0	0	<i>Latastia longicaudata</i>
	0	0	0	<i>Mesalina adramitata</i>
		0		<i>M. ayunensis</i>
0	0			<i>M. brevirostris</i>
0				<i>M. guttulata</i>
			0	<i>M. martini</i>
0				<i>M. oliveri</i>
	0			<i>Omanosaura cyanura</i>
	0			<i>O. jayakari</i>
		0	0	<i>Philochortus neumanni</i>
		0	0	<i>Varanus yemenensis</i>
0	0	0		<i>V. griseus</i>
0	0	0	0	<i>Chalcides ocellatus</i>
	0			<i>C. levitoni</i>
0	0	0		<i>Eumeces schneideri</i>
0	0	0	0	<i>Eurylepis taeniolatus</i>
	0	0	0	<i>Mabuya tessellata</i>
	0	0		<i>M. aurata</i>
		0,0917	0,0917	<i>Panaspis walbergi</i>
		0	0	<i>Scincus hemprichii</i>
0	0	0	0	<i>S. mitranus</i>
0	0	0	0	<i>S. scincus</i>
	0	0	0	<i>Trachylepis brevicollis</i>
	0			<i>T. aurata</i>
	0			<i>T. septemtaeniatus</i>
		0,0917		<i>Leptotyphlops burii</i>
	0,0917	0,0917		<i>L. macrorhynchus</i>
	0,0917	0,0917	0,0917	<i>L. nursii</i>
		0,0917		<i>L. blanfordi</i>
0,0917				<i>L. phillipsi</i>
	0	0		<i>Testudo buxtoni</i>
1				<i>Mauremys rivulata</i>
1				<i>M. caspica</i>
0,0657	0,0254	0,0383	0,0520	ecophysiological index

Table DR 4: Distribution of amphibians and reptiles in cell number 17 to 27 (see figure DR1), their ecophysiological coding, and the ecophysiological index of each cell.

cell number											Species
17	18	19	20	21	22	23	24	25	26	27	
0,3918	0,3918	0,3918	0,3918	0,3918							<i>Salamandra salamandra</i>
0,5130	0,5130	0,5130	0,5130								<i>Triturus alpestris</i>
0,3918											<i>T. helveticus</i>
		0,3918	0,3918	0,3918							<i>T. montandoni</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918		<i>T. vulgaris</i>
							0,3918				<i>T. vittatus</i>
					0,3918	0,3918	0,3918	0,3918			<i>T. karelinii</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918		<i>T. dobrogicus</i>
0,3918											<i>T. cristatus</i>
	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	<i>Alytes obstreticans</i>
0,3918	0,3918	0,3918	0,3918	0,3918							<i>Bombina bombina</i>
0,3918	0,3918	0,3918	0,3918	0,3918							<i>B. variegata</i>
0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	<i>Pelobates fuscus</i>
							0,3918	0,3918	0,3918		<i>Pelodytes caucasicus</i>
							0,3918	0,3918	0,3918		<i>Bufo verrucosissimus</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918				<i>B. bufo</i>
0,3918	0,3918	0,3918	0,3918								<i>B. calamita</i>
0	0	0	0	0	0	0	0	0	0	0	<i>B. viridis</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918			<i>Hyla arborea</i>
0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	0,5130				<i>Rana arvalis</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918						<i>R. dalmatina</i>
							0,3918	0,3918	0,3918		<i>R. macrocmemis</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918			<i>R. temporaria</i>
0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	0,5130				<i>R. lessonae</i>
0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	0,5130	<i>R. ridibunda</i>
1	1	1	1	1	1	1	1	1	1	1	<i>Emys orbicularis</i>
									1		<i>Mauremys caspica</i>
										0	<i>Agrionemys horsfeldi</i>
										0	<i>Alsophylax pipiens</i>
										0	<i>Cyrtodactylus caspicus</i>
									0	0	<i>C. russowi</i>
							0				<i>C. kotschy</i>
									0	0	<i>Trapelus sanguinolentus</i>
									0	0	<i>Phrynocephalus guttatus</i>
									0	0	<i>P. helioscopus</i>
									0	0	<i>P. mystaceus</i>
0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917	0,0917		<i>Anguis fragilis</i>
							0		0		<i>Ophisaurus apodus</i>
					0	0	0	0	0	0	<i>Eremias arguta</i>
									0	0	<i>E. velox</i>
0	0	0	0	0	0	0	0	0	0	0	<i>Lacerta agilis</i>
										0	<i>L. strigata</i>
0	0	0	0	0	0	0					<i>L. viridis</i>
							0	0			<i>L. saxicola</i>
0	0	0	0	0	0	0	0	0	0	0	<i>L. vivipara</i>
									0		<i>L. caucasica</i>
									0		<i>L. rudis</i>
							0				<i>L. derjugini</i>
							0	0	0		<i>L. praticola</i>
0	0	0	0								<i>Podarcis muralis</i>
					0	0					<i>P. taurica</i>
		0									<i>Ablepharus kitaibeli</i>
										0,0917	<i>Typhlops vermicularis</i>
0,3281	0,3252	0,3144	0,3281	0,3349	0,2928	0,2733	0,2705	0,2749	0,1718	0,1160	ecophysiological index

Table DR 5: Distribution of amphibians and reptiles in cell number 28 to 36 (see figure DR1), their ecophysiological coding, and the ecophysiological index of each cell.

cell number									species
28	29	30	31	32	33	34	35	36	
							0,3918		<i>Ichthyophis bannanicus</i>
		1		1	1		1		<i>Andrias davidianus</i>
					0,3918				<i>Hynobius chinensis</i>
					0,9768				<i>Liuia shihi</i>
		0,9768		0,9768	0,9768				<i>Pachyhynobius shangchengensis</i>
0,9768					0,9768				<i>Pseudohynobius tsinpaensis</i>
			0,513	0,513					<i>Ranodon sibiricus</i>
0,3918									<i>Salamandrella keyserlingii</i>
		0,3918					0,3918		<i>Echinotriton asperrimus</i>
		0,513			0,513				<i>Cynops orientalis</i>
							0,9768		<i>Pachytriton brevipes</i>
		0,9768					0,9768		<i>P. labiatus</i>
							0,9768		<i>Paramesotriton caudopunctatus</i>
		0,9768					0,9768		<i>P. chinensis</i>
							0,9768		<i>P. fuzhongensis</i>
							0,9768		<i>P. guangxiensis</i>
								0,9768	<i>Paramesotriton sp.</i>
							0,3918		<i>Bombina fortinuptialis</i>
					0,3918		0,3918		<i>B. microdeladigitata</i>
0,3918	0,3918					0,3918			<i>B. orientalis</i>
					0,3918		0,3918		<i>Bufo andrewsi</i>
							0,3918		<i>B. cryptotympanicus</i>
0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918	0,3918		<i>B. gargarizans</i>
							0,3918	0,3918	<i>B. melanostictus</i>
0	0		0	0					<i>B. raddei</i>
							0,9768		<i>Brachytarsophrys carinensis</i>
					0,9768		0,9768		<i>B. platyparietus</i>
							0,9768	0,9768	<i>Leptolalax pelodytooides</i>
					0,9768				<i>L. oshanensis</i>
					0,9768				<i>Oreolalax lichuanensis</i>
					0,9768				<i>O. rhodostigmatus</i>
		0,9768							<i>Xenophrys boettgeri</i>
								0,9768	<i>X. lateralis</i>
							0,9768	0,9768	<i>X. parva</i>
							0,9768		<i>X. brachykolos</i>
							0,9768		<i>X. kuatunensis</i>
					0,9768		0,9768		<i>X. minor</i>
							0,9768		<i>X. omeimontis</i>
							0,9768		<i>X. spinata</i>
							0,9768		<i>Ophryophryne microstoma</i>
							0,9768		<i>Vibrissaphora liui</i>
							0,3918		<i>Hyla annectans</i>
		0,3918					0,3918		<i>H. chinensis</i>
			0,3918	0,3918	0,3918				<i>H. immaculata</i>
		0,3918					0,3918		<i>H. sanchiangensis</i>
							0,3918		<i>H. simplex</i>
		0,3918			0,3918				<i>H. tsinlingensis</i>
							0,3918		<i>H. zhaopingensis</i>
								0,513	<i>Microhyla berdmorei</i>
					0,513		0,513	0,513	<i>M. butleri</i>
		0,513					0,513	0,513	<i>M. heymonsi</i>
								0,513	<i>M. inornata</i>
		0,513			0,513				<i>M. mixtura</i>
		0,513			0,513		0,513		<i>M. ornata</i>
		0,513					0,513		<i>M. pulchra</i>
								0,3918	<i>Calluella guttulata</i>
	0,3918	0,3918	0,3918	0,3918			0,3918	0,3918	<i>Kaloula pulchra</i>
							0,3918		<i>K. borealis</i>
								0,3918	<i>Kalophrynus interlineatus</i>
					0,3918				<i>Polypedates chenfui</i>
					0,3918				<i>P. dugritei</i>
							0,3918		<i>P. hungfuensis</i>
								0,3918	<i>P. leucomystax</i>
		0,3918			0,3918		0,3918		<i>P. megacephalus</i>
							0,3918		<i>P. mutus</i>
		0,3918							<i>P. nigropunctatus</i>
					0,3918		0,3918		<i>P. omeimontis</i>
							0,3918		<i>P. yaoshanensis</i>
							0,3918	0,3918	<i>Chirixalus vittatus</i>
								0,3918	<i>C. doriae</i>
							0,513		<i>Theloderma asperum</i>
							0,513		<i>T. kwangsiensis</i>
							0,513		<i>Rhacophorus bipunctatus</i>
								0,513	<i>R. bisacculus</i>
		0,513					0,513		<i>R. dennysii</i>
							0,513	0,513	<i>R. reinwardtii</i>

Table DR 5 (cont.)

cell number									species
28	29	30	31	32	33	34	35	36	
							0,3918		<i>Philautus cavirostris</i>
							0,513		<i>P. jinxiuensis</i>
							0,513		<i>P. rhododiscus</i>
		0,513			0,513		0,513	0,513	<i>Hoplobatrachus chinensis</i>
	0,513		0,513					0,513	<i>Fejervarya limnocharis</i>
							0,513		<i>F. cancrivora</i>
							0,9768		<i>Amolops chunganensis</i>
					0,513				<i>Amolops granululosus</i>
					0,9768			0,9768	<i>A. ricketti</i>
						0,9768			<i>A. tormotus</i>
		0,9768							<i>A. wuyiensis</i>
							0,9768		<i>Pseudoamalops sauteri</i>
		0,9768			0,9768		0,9768		<i>Odorrana schmackeri</i>
		0,513			0,513				<i>Chaparana quadranus</i>
		0,513					0,513		<i>Rana adenopleura</i>
0,513									<i>R. amurensis</i>
							0,513	0,513	<i>R. andersoni</i>
0,3918									<i>R. asiatica</i>
								0,513	<i>R. blythii</i>
0,3918			0,3918	0,3918	0,3918	0,3918			<i>R. chensinensis</i>
								0,513	<i>R. nigrovittata</i>
		0,513			0,513		0,513		<i>R. guentheri</i>
		0,513					0,513		<i>R. latouchii</i>
		0,513					0,513	0,513	<i>R. livida</i>
							0,9768		<i>R. lungshengensis</i>
	0,513	0,513			0,513	0,513	0,513		<i>R. japonica</i>
								0,513	<i>R. johnsi</i>
							0,513		<i>R. taipehensis</i>
		0,513							<i>R. tientaiensis</i>
					0,9768		0,9768		<i>R. margaretae</i>
								0,513	<i>R. montivaga</i>
		0,9768					0,9768		<i>R. nigrotympanica</i>
0,513	0,513			0,513			0,513		<i>R. nigromaculata</i>
	0,513	0,513		0,513	0,513	0,513			<i>R. plancyi</i>
				0,513					<i>R. swinhoana</i>
		0,9768					0,9768		<i>R. versabilis</i>
							0,513		<i>Occidozyga lima</i>
							0,513	0,513	<i>O. martensi</i>
							0,513		<i>Hylarana macrodactyla</i>
					0,9768		0,9768		<i>Paa boulengeri</i>
							0,9768		<i>P. exilispinosa</i>
								0,9768	<i>P. microlineata</i>
							0,9768		<i>P. shini</i>
		0,513					0,513		<i>P. spinosa</i>
								0,513	<i>Limnonectes kohchangae</i>
								0,513	<i>L. pileata</i>
		0,513					0,513	0,513	<i>L. kuhlii</i>
								1	<i>Crocodylus siamensis</i>
	1	1			1		1	1	<i>Platystemum megacephalum</i>
								1	<i>Malayemys subtrijuga</i>
		0,3918							<i>Cuora aurocapitata</i>
	0,3918	0,3918		0,3918	0,3918		0,3918		<i>C. flavomarginata</i>
							0,3918		<i>C. galbinifrons</i>
							0,3918		<i>C. mccordi</i>
							0,3918		<i>C. trifasciata</i>
							0,3918		<i>C. zhoui</i>
								1	<i>Cyclemys tcheponensis</i>
								1	<i>C. dentata</i>
	0,513						0,513		<i>Chinemys megaloccephala</i>
							0,513		<i>C. nigricans</i>
	0,513	0,513			0,513	0,513	0,513		<i>C. reevesii</i>
							0		<i>Geoemyda spengleri</i>
							1		<i>Mauremys iversoni</i>
	1	1					1		<i>M. mutica</i>
	1						1		<i>Ocadia sinensis</i>
							0,513	0,513	<i>Pyxidea mouhotii</i>
							0,513	0,513	<i>Indotestudo elongata</i>
							0,513	0,513	<i>Manouria impressa</i>
		1					1		<i>Sacalia bealei</i>
							1	1	<i>S. quadriocellata</i>
								1	<i>Amyda cartilaginea</i>
							1		<i>Palea steindachneri</i>
	1						1		<i>Pelochelys cantorii</i>
1	1	1	1	1	1	1	1		<i>Pelodiscus sinensis</i>
					0,0917		0,0917	0,0917	<i>Ramnotyphlops braminus</i>
0									<i>Alsophylax pipiens</i>

Table DR 5 (cont.)

cell number									species
28	29	30	31	32	33	34	35	36	
							0,0917	0,0917	<i>Cosymbotus platyurus</i>
							0,0917		<i>Gekko chinensis</i>
							0,0917	0,0917	<i>G. gecko</i>
	0,0917	0,0917		0,0917		0,0917	0,0917		<i>G. hokouensis</i>
	0,0917	0,0917		0,0917	0,0917		0,0917		<i>G. japonicus</i>
							0,0917		<i>G. subpalmatus</i>
	0,0917	0,0917	0,0917	0,0917		0,0917			<i>G. swinhonis</i>
							0		<i>Goniurosaurus luii</i>
							0,0917		<i>Hemidactylus bowringii</i>
								0,0917	<i>H. frenatus</i>
								0,0917	<i>H. garnotii</i>
							0,0917	0,0917	<i>Hemiphyllodactylus yunnanensis</i>
								0,0917	<i>Phyllodactylus siamensis</i>
								0,0917	<i>Gehyra mutilata</i>
0									<i>Cyrtodactylus elongatus</i>
								0	<i>C. jarujini</i>
							0,0917		<i>Dibamus bourreti</i>
								0,0917	<i>Acanthosaura crucigera</i>
							0,0917	0,0917	<i>A. lepidogaster</i>
							0,0917	0,0917	<i>Calotes versicolor</i>
								0,0917	<i>C.emma</i>
								0,0917	<i>C. mystaceus</i>
							0,0917	0,0917	<i>Pseudocalotes microlepis</i>
					0,0917				<i>Japalura flaviceps</i>
					0,0917				<i>J. splendida</i>
							0,0917		<i>J. szechwanensis</i>
								0,0917	<i>Leiolepis belliana</i>
							0,0917		<i>L. reevesi</i>
								0,0917	<i>Ptyctolaemus phuwanensis</i>
							0,513		<i>Physignathus cocincinus</i>
0				0					<i>Phrynocephalus frontalis</i>
0									<i>P. immaculatus</i>
0									<i>P. przewalskii</i>
0									<i>P. versicolor</i>
							0,0917	0,0917	<i>Draco maculatus</i>
							0,0917		<i>Ateuchosaurus chinensis</i>
				0	0				<i>Eumeces capito</i>
	0	0			0		0		<i>Eumeces chinensis</i>
	0	0	0	0	0		0		<i>E. elegans</i>
	0				0				<i>E. luii</i>
							0		<i>E. quadrilineatus</i>
								0	<i>Mabuya macularia</i>
							0	0	<i>M. multifasciata</i>
								0	<i>M. longicaudata</i>
	0,0917	0,0917	0,0917	0,0917	0,0917				<i>Scincella modesta</i>
							0,0917		<i>S. reevesii</i>
0									<i>Teratoscincus przewalskii</i>
	0,513	0,513			0,513		0,513	0,513	<i>Sphenomorphus indicus</i>
					0,3918		0,3918		<i>S. incognitus</i>
					0,3918				<i>S. taiwanensis</i>
								0,513	<i>Tropidophorus laotus</i>
							0,513		<i>T. guangxiensis</i>
							0,513		<i>T. hainanus</i>
							0,513		<i>T. sinicus</i>
					0,0917		0,0917		<i>Takydromus sexlineatus</i>
0	0	0			0		0		<i>T. septentrionalis</i>
	0	0			0				<i>T. wolteri</i>
							0		<i>Platyplacopus intermedius</i>
							0		<i>P. kuehnei</i>
0	0	0	0	0	0				<i>Eremias argus</i>
0	0	0	0	0	0				<i>E. brenchleyi</i>
0									<i>E. multiocellata</i>
0									<i>E. przewalsii</i>
0									<i>E. velox</i>
0									<i>E. vermiculata</i>
0									<i>Lacerta vivipara</i>
							0,9768		<i>Shinisaurus crocodilurus</i>
	0,0917	0,0917					0,0917		<i>Ophisaurus harti</i>
								0,0917	<i>Varanus bengalensis</i>
							1	1	<i>V. salvator</i>
0,1985	0,3661	0,5083	0,2905	0,3368	0,5100	0,4062	0,5340	0,4482	ecophysilogic index

APPENDIX DR 7: THE FOSSIL RECORD OF AMPHIBIANS AND REPTILES OF THE INVESTIGATED LOCALITIES

Early Langhian NAFB	Sandelzhausen	Walda 1	Walda 2	species
0,0917	0,0917			<i>Albanerpeton inexpectatum</i>
0,513	0,513			Caudata indet.
1		1	1	<i>Mioproteus caucasicus</i>
0,3918	0,3918		0,3918	<i>Salamandra sansaniensis</i>
0,3918	0,3918	0,3918	0,3918	<i>Chelotriton paradoxus</i>
0,3918	0,3918			<i>Triturus vulgaris</i>
0,513	0,513			<i>Triturus cf. marmoratus</i>
0,3918	0,3918	0,3918	0,3918	<i>Latonia gigantea</i>
0,3918		0,3918		<i>Eopelobates</i> sp.
0,0917	0,0917		0,0917	<i>Pelobates</i> sp.
0	0	0		<i>Bufo cf. viridis</i>
0,513	0,513	0,513	0,513	<i>Rana (ridibunda)</i> sp.
0,0917	0,0917			<i>Palaeoblanus cf. tobieni</i>
0,0917	0,0917		0,0917	<i>Chamaeleo caroliquarti</i>
0,0917	0,0917			<i>Chamaeleo bavaricus</i>
1	1		1	<i>Trionyx</i> sp.
1			1	<i>Chelydropsis</i> sp.
1	1		1	<i>Mauremys</i> sp.
0,3918	0,3918			<i>Clemmydopsis turnauensis</i>
0,513	0,513	0,513	0,513	<i>Ergilemys</i> sp.
0,3918			0,3918	<i>Ptychogaster</i> sp.
0	0	0	0	<i>Testudo</i> sp.
1	1	1	1	<i>Diplocynodon</i> sp.
0	0	0		<i>Lacerta</i> sp.
0	0			<i>Miolacerta</i> sp.
0	0		0	<i>Amblyolacerta</i> sp.
0	0			Lacertidae indet.
0		0		Scincidae indet.
0	0		0	<i>Pseudopus moguntinus</i>
0	0			<i>Ophisaurus spinari</i>
0	0			<i>Ophisaurus</i> sp. 2
0	0	0	0	<i>Ophisaurus</i> sp.
0,3204	0,2766	0,3501	0,4574	ecophysiologic index
734 mm	629 mm	805 mm	1043 mm	mean annual precipitation

Table DR 6: Fossil amphibian and reptiles and their coding from the early Langhian of the North Alpine Foreland Basin (NAFB). Data after Schleich 1985, Böhme 1999, Böhme 2003, Böhme and Ilg 2003.

Early Langhian Calatayud B.	La Col C	Moratilla 2	Villafeliche 4A	species
0,3918		0,3918		<i>Alytes</i> sp.
0,0917		0,0917		<i>Pelobates</i> sp.
	0,3918		0,3918	Anura indet.
1		1	1	Emydidae indet.
0	0	0	0	<i>Lacerta</i> sp. 1
0	0	0	0	<i>Lacerta</i> sp. 2
0		0	0	<i>Lacerta</i> sp. 3
0		0		Cordylidae indet.
	0			Scincidae indet.
0		0	0	Scincidae indet. 1
0	0	0	0	Scincidae indet. 2
	0			Anguidae indet.
0		0	0	<i>Ophisaurus</i> sp.
0			0	Varanoidae indet.
0,0917			0,0917	<i>Blanus</i> sp. 2
0,0917	0,0917			<i>Blanus</i> sp. 4
		0,0917		Amphisbaenidae indet.
0,1282	0,0691	0,1432	0,1484	ecophysiologic index
272 mm	130 mm	308 mm	321 mm	mean annual precipitation

Table DR 7: Fossil amphibian and reptiles and their coding from the early Langhian of the Calatayud-Daroca Basin (Spain). Data after Böhme and Ilg 2003.

Early Tortonian Teruel Basin	Cascante 4	Masia de la Roma 3	Masia de la Roma 4B	species
0,513	0,513	0,513		<i>Triturus</i> sp.
0,3918	0,3918			aff. <i>Chelotriton</i> sp.
0,513	0,513	0,513	0,513	<i>Rana (ridbunda)</i> sp.
1			1	Crocodylidae indet.
0	0	0	0	<i>Lacerta</i> sp.
0	0	0	0	Anguidae indet.
0,0917		0,0917		Amphisbaenidae indet.
0,3585	0,2836	0,2235	0,3783	ecophysiologic index
826 mm	646 mm	501 mm	873 mm	mean annual precipitation

Table DR 8: Fossil amphibian and reptiles and their coding from the early Tortonian of the Teruel Basin (Spain). Data after Böhme and Ilg 2003.

Early Tortonian W+C Paratethys	Hammerschmiede	Götzendorf	Rudabanja	species
1	1	1	1	<i>Mioproteus caucasicus</i>
1		1		<i>Andrias scheuchzeri</i>
0,3918		0,3918	0,3918	<i>Chelotriton</i> sp. 1
0,3918			0,3918	<i>Chelotriton</i> sp. 2
1			1	Salamandridae indet.
0,513	0,513	0,513	0,513	<i>Triturus</i> sp. 1
0,513			0,513	<i>Triturus</i> sp. 2
0,3918	0,3918	0,3918	0,3918	<i>Latonia gigantea</i>
0,513			0,513	<i>Bombina</i> sp.
0,3918			0,3918	cf. <i>Discoglossus</i>
0,3918			0,3918	Discoglossidae indet.
1		1	1	<i>Palaeobatrachus</i> sp.
1			1	cf. <i>Palaeobatrachus</i> sp.
0,3918			0,3918	<i>Pelodytes</i> sp.
0,3918			0,3918	<i>Hyla</i> sp.
0,513		0,513	0,513	<i>Rana (ridibunda)</i> sp.
0,3918			0,3918	Pelobatidae
1	1	1	1	<i>Trionyx</i> sp.
1	1	1		<i>Chelydropsis</i> sp.
0,3918	0,3918			<i>Clemmydopsis</i> sp.
0,3918			0,3918	<i>Geoemyda</i> sp.
0			0	<i>Testudo</i> cf. <i>kalksburgensis</i>
	0	0		<i>Testudo</i> sp.
0,0917			0,0917	cf. <i>Typhlops</i> sp.
0		0	0	<i>Lacerta</i> sp.
0	0	0		<i>Pseudopus moguntinus</i>
0			0	aff. <i>Ophisaurus</i> sp.
0,5024	0,5371	0,5675	0,4850	ecophysiological index
1171 mm	1255 mm	1328 mm	1129 mm	mean annual precipitation

Table DR 9: Fossil amphibian and reptiles and their coding from the early Tortonian of the Western and Central Paratethys. Data after Rögl et al. 1993, Tempfer 2002, Böhme and Ilg 2003, Bernor et al. 2004.

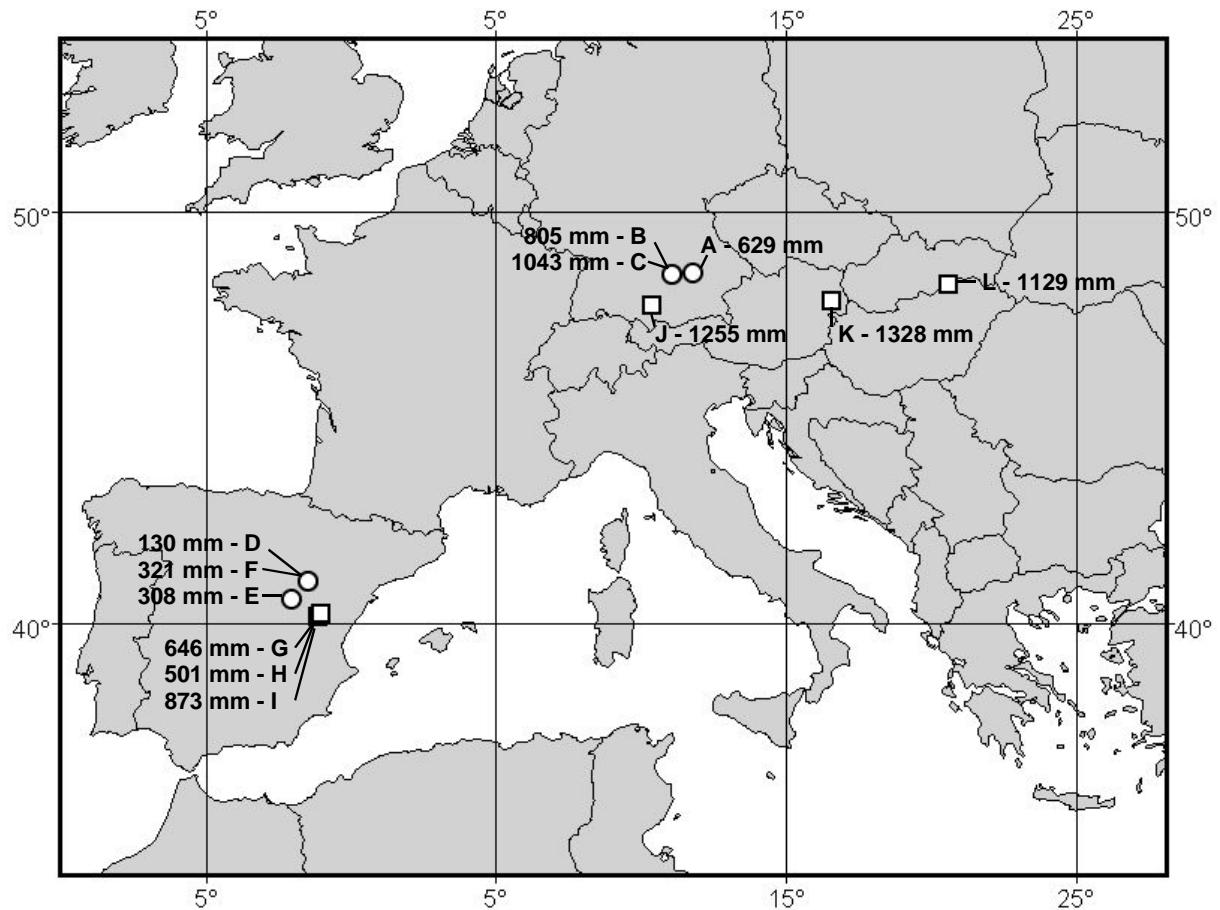


Figure DR2: Geographical location of the fossil localities and their precipitation estimates. Abbreviation: A – Sandelzhausen, B – Walda 1, C – Walda 2, D – La Col C, E – Moratilla 2, F – Villafeliche 4A, G – Cascante 4, H – Masia de la Roma 3, I – Masia de la Roma 4B, J – Hammerschmiede, K – Götzendorf, L – Rudabanya.

APPENDIX DR 8: PALEOPRECIPITATION ESTIMATES FOR THE EARLY MIDDLE AND EARLY UPPER MIOCENE OF THE IBERIAN PENINSULA AND CENTRAL EUROPE

locality/area	habitat	age (m.y.)	n	AP (mm) this paper	AP (mm) other methods
Rudabanya	swamp	~10.0-9.8	22	1129 (+272, -261)	1235 ± 350-400 (1) 897-1297 (2) 250-5070 (3) 900-1200 (4)
Götzendorf	river	~9.8	12	1328 (+282, -268)	1000-1200 ± 350-400 (1)
Hammerschmiede	swamp	~10.3	8	1255 (+278, -265)	1122-1520 (5)
Western + Central Paratethys		10.3-9.8	26	1171 (+274, -262)	900-1350 (2, 5) 1000-1200 ± 350-400 (1)
Cascante 4	alluvial	10.1	5	646 (+258, -252)	~650 ± 350-400 (1)
Masia de la Roma 3	alluvial	9.8	5	501 (+257, -252)	~460 ± 350-400 (1)
Masia de la Roma 4B	alluvial	9.7	4	873 (+263, -254)	~600 ± 350-400 (1)
Teruel Basin		10.1-9.7	7	826 (+262, -254)	380-760 ± 350-400 (1)
Sandelzhausen	pond	~15.7	27	629 (+258, -252)	-
Walda 1	pond	~15.5	12	805 (+262, -253)	-
Walda 2	river	~15.3	17	1043 (+269, -259)	-
North Alpine Foreland Basin		15.7-15.3	32	734 (+260, -253)	828-1362 (2)
La Col C	alluvial	15.89	7	130 (+260, -259)	-
Moratilla 2	alluvial	15.81	11	308 (+258, -255)	-
Villafeliche 4A	alluvial	15.51	10	321 (+258, -254)	-
Calatayud Basin		15.89-15.51	13	272 (+258, -254)	-

Table DR 10: Paleoprecipitation estimates for the early Middle and early Upper Miocene of the Iberian Peninsula and Central Europe, compared to estimates resulting from other methods. n – number of analyzed amphibian and reptile taxa; (1) – small mammal community structure (van Dam 2003, van Dam in Bernor et al. 2004), (2) – Coexistence Approach (Utescher in Bernor et al. 2004, Bruch et al. in press, Böhme et al. in press), (3) – ungulate hypsodonty (Damuth in Bernor et al. 2004), (4) – mammalian dental morphology and local species richness (Damuth in Bernor et al. 2004), (5) – Coexistence Approach (Angela Bruch unpubl., 9/2004).

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