

TABLE 3

## Enzymes: Laboratory Reference Ranges for Selected Species—cont'd

Species Common Name (Common name synonyms) Scientific Name	N*	Lactate Dehydrogenase (U/L)		Creatine Kinase (U/L)	
		Mean	Range	Mean	Range
Ostrich <i>Struthio camelus</i>	140	970	408–1236	3702	800–6505
Owl, great-horned <i>Bubo virginianus</i>	18	282.8	142–383	286.7	252–376
Parakeet, Alexandrine <i>Psittacula eupatria</i>	18				
Parakeet, ringneck (Rose-ringed parakeet) <i>Psittacula krameri</i>	46	213.9	150–318		
Parrot, Meyers <i>Poicephalus meyeri</i>	39				
Parrot, red-bellied <i>Poicephalus rufiventris</i>	14				
Parrot, Senegal <i>Poicephalus senegalus</i>	244	254.1	153–396	288	151–396
Parrot, thick-billed <i>Rhynchopsitta pachyrhyncha</i>	10	173	158–202	251.6	200–344
Parrotlet species Genus <i>Forpus</i> sp.	29				
Pionus species group Genus <i>Pionus</i> sp.	431	248.5	179–384	276.2	116–406
Pionus, blue-headed <i>Pionus menstruus</i> *	26	225.3	138–384		
Pionus, white capped <i>Pionus senilis</i>	49	228.5	157–354	219.6	106–365
Quaker parrot (Monk parakeet) <i>Myiopsitta monachus</i>	210	243	138–360	318.8	192–402
Rosella, Genus <i>Platycercus</i> sp.	21	223.9	121–348		
Swan <i>Cygnus</i> sp.	36	244.2	150–352	246.9	130–389
Toucan <i>Ramphastos</i> sp.	86	257.6	180–319		

Aspartate Aminotransferase (U/L)	Alkaline Phosphatase (U/L)	Amylase (U/L)	Bile Acids ( $\mu$ mol/L)	
Mean	Mean	Mean	Mean	
Range	Range	Range	Range	
447.9	39		21	2-30
226-547			23.5	8-54
196.7	8-102			
104-344				
252.7				
159-303				
178				
120-360				
229.8				
156-352				
245.8				
176-316				
202.8			587	20-94
120-330			55	22-98
143-280	81.5	70-93		
110-224				
173.7			47	15-92
222.3				
135-358				
241.8				
148-342				
213.5				
120-346				
248.6			55.3	21-90
130-380				
176.3				
116-258				
52.3	66.7	48-92	38.9	18-85
10-108				
243.3	43.3	14-88	54.4	16-86
141-340				



TABLE 4

## Metabolic: Laboratory Reference Ranges for Selected Species—cont'd

Species Common Name (Common name synonyms) Scientific Name	N <sup>†</sup>	Units	Uric Acid Conventional: (mg/dL) S.I.: (μmol/L)	
			Mean	Range
Macaw, scarlet (Red and yellow macaw) <i>Ara macao</i>	146	Conventional S.I.	5.15 306.3	2.1–11 121.9–642.4
Macaw, severe (Chestnut-fronted macaw) <i>A. severus</i>	104	Conventional S.I.	6.51 387.2	2.2–12 129.7–701.9
Macaw, yellow-collared (Golden-collared macaw) <i>Primolius auricollis</i>	70	Conventional S.I.	7.44 442.5	3.4–12 204.0–702.5
Moustache parakeet (Rose-breasted parakeet) <i>Psittacula alexandri</i>	26	Conventional S.I.	6.81 405.1	3.1–11 185.0–624.5
Mynah species, mostly <i>Acridotheres tristis</i>	44	Conventional S.I.	7.57 450.3	2.3–12 134.4–713.2
Ostrich <i>Struthio camelus</i>	140	Conventional S.I.	8.62 512.7	1.0–15 59.5–892.2
Owl, great-horned <i>Bubo virginianus</i>	18	Conventional S.I.	8.52 506.8	3.1–12 183.2–703.6
Parakeet, Alexandrine <i>Psittacula eupatria</i>	18	Conventional S.I.	7.16 425.9	4.3–11 257.5–640.0
Parakeet, ringneck (Rose-ringed parakeet) <i>Psittacula krameri</i>	46	Conventional S.I.	6.7 398.5	3.3–12 193.9–700.7
Parrot, Meyers <i>Poicephalus meyeri</i>	39	Conventional S.I.	5.72 340.2	2.1–11 26.1–672.1
Parrot, red-bellied <i>Poicephalus rufiventris</i>	14	Conventional S.I.	6.55 389.6	3.0–9.5 178.4–562.7
Parrot, Senegal <i>Poicephalus senegalus</i>	244	Conventional S.I.	5.95 353.9	2.3–12 134.4–707.8
Parrot, thick-billed <i>Rhynchopsitta pachyrhyncha</i>	10	Conventional S.I.	6.47 384.8	3.4–11 202.2–683.4
Parrotlet species Genus <i>Forpus</i> sp.	29	Conventional S.I.	8.23 489.5	4.1–12 244.5–694.1
Pionus species group Genus <i>Pionus</i> sp.	431	Conventional S.I.	5.91 351.5	2.0–12 120.7–685.2
Pionus, blue-headed <i>Pionus menstruus</i>	26	Conventional S.I.	6.11 363.4	3.1–12 184.4–710.8
Pionus, white-capped <i>P. senilis</i>	49	Conventional S.I.	5.62 334.3	2.1–11 126.7–662.0
Quaker parrot (Monk parakeet) <i>Myiopsitta monachus</i>	210	Conventional S.I.	6.8 404.5	2.2–12 133.2–712.6
Rosella, Genus <i>Platycercus</i> sp.	21	Conventional S.I.	7.22 429.4	3.4–11 201.6–634.7
Swan <i>Cygnus</i> sp.	36	Conventional S.I.	6.82 405.7	2.1–11 126.1–654.3
Toucan <i>Ramphastos</i> sp.	86	Conventional S.I.	7.93 471.7	2.4–14 144.5–832.7

Glucose		Cholesterol		Total Protein		Total Calcium	
S.I.: (mmol/L)		S.I.: (mmol/L)		S.I.: (g/L)		S.I.: (mmol/L)	
Conventional: (mg/dL)	Range	Conventional: (mg/dL)	Range	Conventional: (g/dL)	Range	Conventional: (mg/dL)	Range
265.7	210-333	183.2	12-247	3.2	2.4-3.8	9.38	8.4-10.9
14.8	11.66-18.48	4.74	3.10-6.39	32.3	24-37.7	2.34	2.10-2.72
278.5	220-366	180.6	100-252	3.3	2.3-3.9	9.4	8.4-10.8
15.5	12.21-20.32	4.67	2.59-6.52	32.9	23-39	2.35	2.10-2.69
278.6	126-363	181.7	108-240	3.7	3.2-4.4	10.1	8.8-11.7
15.5	6.99-20.15	4.7	2.79-6.21	36.9	32-44	2.52	2.20-2.92
284.6	225-348					9.3	8.3-10.8
15.8	12.49-19.32					2.32	2.07-2.69
318.5	228-372	204.1	126-244	3.6	3-4.3	9.41	8.2-10.8
17.7	12.66-20.65	5.28	3.26-6.31	35.6	30-43	2.35	2.05-2.69
217	164-330	103	39-172	3.9	2.4-5.3	10.7	8.0-13.6
12.1	9.10-18.32			39	24-53	2.67	2.00-3.39
319.1	237-390	191.4	114-261	4	3.3-4.6	10.2	8.8-12.4
17.7	13.16-21.65	4.95	2.95-6.75	39.5	33-45.9	2.6	2.20-3.09
254.3	192-308					9.13	8.0-10.9
14.1	10.66-17.10					2.28	2.00-2.73
294.4	220-354					9.21	8.4-10.4
16.34	12.21-19.65					2.3	2.10-2.59
255.5	212-294					9.34	8.2-10.4
14.2	11.7-16.32					2.33	2.05-2.59
275.1	232-326						
15.27	12.88-18.10					9.24	8.4-10.8
288.7	256-354	193.8	114-250	3.4	2.9-4.1		
16.02	14.21-19.65	5.01	2.95-6.47	34.2	29-41.2	2.31	2.10-2.69
295	246-350	159.8	102-214	3	2.8-3.6	9.11	8.0-10.5
16.38	13.66-19.43	4.13	2.64-5.53	30.3	28-36	2.27	2.00-2.62
308.7	252-384						
17.13	13.99-21.32					9.23	8.2-10.4
279.5	212-368	229	176-258	3.4	2.3-4.3		
15.51	11.77-20.43	5.92	4.55-6.67	34.1	23-43	2.3	2.05-2.59
276.4	200-348					8.93	8.0-10
15.34	11.10-19.32					2.23	2.00-2.50
282.5	221-348					8.94	8.2-10
15.68	12.27-19.32					2.23	2.05-2.50
287.9	210-395	219.1	100-262	3.1	2.5-3.7	9.23	8.4-10.8
15.98	11.66-21.93	5.67	2.59-6.78	31.2	25-37	2.3	2.10-2.69
337.6	281-396					9.27	8.0-10.9
18.74	15.60-21.98					2.31	2.00-2.72
187.9	132-360	164.6	92-250	3.4	2.3-4.4	10.9	8.2-13.4
10.43	7.33-19.98	4.26	2.38-6.47	33.6	23-44	2.72	2.05-3.34
297.9	222-363	175.1	104-254	3.5	2.8-4.4	10.2	8.8-11.8
16.53	12.32-20.15	4.53	2.69-6.57	34.9	28-44.2	2.55	2.20-2.95