

ORGAN WEIGHTS OF *PONTOPORIA BLAINVILLEI* AND *PLATANISTA GANGETICA* (PLATANISTIDAE)

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Ninety-five specimens of the Franciscana *Pontoporia blainvillei* were collected by the University of Tokyo Cetacean Research Expedition at Punta del Diablo, Uruguay, from December 1972 to February 1973. Various measurements were taken on the visceral organs of 14 of those animals; they are shown in Table 1. Most of the organs were weighed fresh at Punta del Diablo, but some of them were weighed after fixation in 10% formalin solution.

The same organization collected 15 Susu, *Platanista gangetica* in the Brahmaputra River (Bangladesh) in 1969-'70 and similar quantitative data were obtained from 4 individuals (Table 2).

We wish to compare the figures obtained from the heart, the pancreas and the kidney of both species (*Pontoporia* and *Platanista*), limiting this paper to short notes on the raw data and percentages.

Heart. The relative weight of the heart varies from 0.42 to 0.69% in *Pontoporia* and from 0.22 to 0.28% in *Platanista*. The difference is notable. This may be because it is related to the difference of habitats, *Pontoporia* living in open coastal water and *Platanista* in quiet inland fresh water.

Pancreas. These figures also are higher in *Pontoporia* than in *Platanista*. The relative weight of the former ranges from 0.12 to 0.35% whereas that of the latter varies only from 0.04 to 0.09%. We should point out that, in *Platanista*, the pancreas occupies the usual retroperitoneal position but that, in *Pontoporia*, the greater part of the pancreas is enclosed in a mesentery, hanging more or less freely in the abdominal cavity. Also it is worth noticing that the organ is a bulky suboval mass in *Platanista* whereas that of the *Pontoporia* is flat and enclosed throughout most of the dorsal layer of the omentum majus.

Kidney. A similar difference is observed between the kidney of *Pontoporia* (0.30 to 0.43%) and that of *Platanista* (0.12 to 0.27%). Two specimens of *Platanista*, 117 and 199 cm long, had right kidneys weighing* 45 and 83 g respectively, but two specimens of *Pontoporia* approximately of similar size (113 and 171 cm) had right kidneys weighing 60 and 170 g, respectively. In the case of one *Inia geoffrensis* specimen with a body length of 204 cm, the kidney weight was 150 g. We get the impression again that the sea-living *Pontoporia* possesses a relatively larger organ

* weight of renuli without interrenicular connective tissue.

than the fresh water inhabiting *Platanista* and *Inia*. This fact is reinforced by the figures obtained from three more sea-dolphins i.e., *Neophocaena phocaenoides* (body length 150 cm) with a kidney weighing 210 g, *Delphinus delphis* (177 cm) with a 154 g kidney and *Stenella coeruleoalba* (207 cm) with one of 186 g.

Observation of the lobulation of the kidneys also showed differences between the sea and river dolphins. We found 46 and 57 *renculi* in *Platanista*, 75 and 90 in *Pontoporia*, but 138 in *Neophocaena*, 269 in *Delphinus* and 270 in *Stenella*. However, notwithstanding that *Inia* lives in fresh water, it has a richly lobulated kidney with 215 *renculi*.

We plan to present more data in a forthcoming paper on other organs of the same species and to discuss more thoroughly the possible significance of the sea-habitat vs. the river-habitat concerning the relative size of those organs.

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TABLE 1. BODY LENGTH, BODY WEIGHT AND ORGAN WEIGHTS OF 14 SPECIMENS OF *PONTOPORIA BLAINVILLEI*.

Specimen field number	RLB. 838	RLB. 836	RLB. 812	RLB. 805	RLB. 801
Body length	84.5 cm	90.5 cm	98.5 cm	105.0 cm	120.0 cm
Sex	M	M	F	M	F
Body weight	10.9 kg	11.8 kg	14.5 kg	14.5 kg	20.4 kg
Brain	160.0g (1.468%)	165.0 (1.398)		180.0 (1.241)	
Heart	73.5 (0.674)	50.0 (0.424)	100.0* (0.690)	68.5 (0.472)	130.0 (0.637)
Spleen		4.3 (0.0364)	1.7* (0.0117)	1.0 (0.00690)	
Lung	{ ^l {r	68.5 (0.628)	75.0 (0.636)	81.5 (0.562)	90.0 (0.441)
		80.0 (0.734)	80.0 (0.678)	83.5 (0.576)	105.0 (0.515)
Stomach	75.0 (0.688)	145.0 (1.229)	100.0* (0.690)	230.0 (1.586)	300.0 (1.471)
Intestine		770.0 (6.525)	360.0* (2.483)	800.0 (5.517)	1250.0 (6.127)
Liver	237.0 (2.174)	355.0 (3.008)	280.0* (1.931)	380.0 (2.621)	570.0 (2.794)
Pancreas	20.5 (0.188)	41.0 (0.347)	18.0* (0.124)	32.1 (0.221)	62.0 (0.304)
Kidney	{ ^l {r	43.0 (0.394)	41.0 (0.347)	62.0* (0.428)	72.3 (0.354)
		42.0 (0.385)	43.5 (0.369)	53.0* (0.366)	72.0 (0.353)
Adrenal	{ ^l {r	0.9 (0.00826)	0.4 (0.00339)	1.2* (0.00828)	1.0 (0.00490)
		0.7 (0.00642)	0.6 (0.00508)	1.2* (0.00828)	1.1 (0.00539)
Thyroid	2.4 (0.0220)	2.6 (0.0220)		0.7 (0.00483)	
Thymus	20.5 (0.188)	18.5 (0.157)	30.0* (0.207)	2.0 (0.0138)	
Pituitary	0.15(0.00138)				
Testis	{ ^l {r	0.9 (0.00763)		0.2 (0.00138)	
		0.8 (0.00678)		0.2 (0.00138)	
Epididymis	{ ^l {r	0.5 (0.00424)			
		0.5 (0.00424)			
Ovary	{ ^l {r		0.15* (0.00103)		0.2 (0.000980)
			0.15* (0.00103)		0.2 (0.000980)
Mammary gland	{ ^l {r				
Blubber	3900.0 (35.780)	4000.0 (33.898)		4450.0 (30.690)	5600.0 (27.451)
Skeletal muscle	3115.0 (28.578)	2605.0 (22.076)		5000.0 (34.483)	

* calculated from the value after preservation in 10% formalin solution.

Figures in parenthesis indicate percentages of body weight.

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TABLE 1. Continued.

Specimen field number	RLB. 807		RLB. 818		RLB. 808		RLB. 802		RLB. 870	
	M	F	M	F	M	F	M	F	M	F
Body length	123.0 cm	130.0 cm	131.5 cm	132.0 cm	136.0 cm					
Sex	M	F	M	F	M	F	M	F	M	F
Body weight	23.1 kg	25.4 kg	29.5 kg	28.6 kg	29.0 kg					
Brain		215.0 (0.846)								230.0 (0.793)
Heart	150.0g(0.649)	130.0 (0.512)	145.0 (0.492)	140.0 (0.490)	150.0 (0.517)					150.0 (0.517)
Spleen	5.4 (0.0234)	4.2 (0.0165)	5.3 (0.0180)	4.3 (0.0150)	2.8 (0.00966)					2.8 (0.00966)
Lung	150.0 (0.649)	145.0 (0.571)	173.0 (0.586)	110.0 (0.385)	125.0 (0.431)					125.0 (0.431)
	160.0 (0.693)	175.0 (0.689)	235.0 (0.797)	140.0 (0.490)	175.0 (0.603)					175.0 (0.603)
Stomach		350.0 (1.378)	500.0 (1.695)	450.0 (1.573)	410.0 (1.414)					410.0 (1.414)
Intestine	1250.0 (5.411)	1600.0 (6.299)	1400.0 (4.746)	2150.0 (7.517)	1700.0 (5.862)					1700.0 (5.862)
Liver	650.0 (2.814)	620.0 (2.441)	850.0 (2.881)	700.0 (2.448)	800.0 (2.759)					800.0 (2.759)
Pancreas	58.0 (0.251)	75.0 (0.295)	62.0 (0.210)	63.5 (0.222)	91.0 (0.314)					91.0 (0.314)
	72.0 (0.312)	90.0 (0.354)	120.0 (0.407)	95.5 (0.334)	100.0 (0.345)					100.0 (0.345)
Kidney	73.0 (0.316)	88.0 (0.346)	115.0 (0.390)	91.0 (0.318)	87.0 (0.300)					87.0 (0.300)
	0.6 (0.00260)	1.1 (0.00433)		1.3 (0.00455)	1.1 (0.00379)					1.1 (0.00379)
Adrenal	0.7 (0.00303)	1.1 (0.00433)		1.3 (0.00455)	1.0 (0.00345)					1.0 (0.00345)
Thyroid	3.0 (0.0130)	3.7 (0.0146)	3.2 (0.0108)	6.0 (0.0210)	3.0 (0.0103)					3.0 (0.0103)
Thymus	13.5 (0.0584)	21.5 (0.0846)	8.5 (0.0288)	48.5 (0.170)	37.0 (0.128)					37.0 (0.128)
Pituitary		0.2 (0.000787)			0.15 (0.000517)					0.15 (0.000517)
Testis	0.5 (0.00216)		3.2 (0.0108)							
	0.4 (0.00173)		3.2 (0.0108)							
Epididymis	0.6 (0.00260)		3.8 (0.0129)							
	0.5 (0.00216)		3.2 (0.0108)							
Ovary		0.25 (0.000984)		0.15 (0.000524)						0.2 (0.000690)
		0.2 (0.000787)		0.20 (0.000699)						0.25 (0.000862)
Mammary gland										
Blubber	7250.0 (31.385)	8610.0 (33.898)	9130.0 (30.949)	8350.0 (29.196)	8530.0 (29.414)					8530.0 (29.414)
Skeletal muscle	8630.0 (37.359)	8700.0 (34.252)	10300.0 (34.915)	10400.0 (36.364)	10140.0 (34.966)					10140.0 (34.966)

* calculated from the value after preservation in 10% formalin solution.

Figures in parenthesis indicate percentages of body weight.

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TABLE 1. Continued.

Specimen field number	RLB. 822		RLB. 835		RLB. 837		RLB. 803	
	Body length	F	Body length	M	Body length	F	Body length	F
Sex								
Body weight		33.1 kg		35.4 kg		45.4 kg		52.2 kg
Brain		235.0g (0.710)		240.0 (0.678)		205.0 (0.452)		250.0 (0.479)
Heart		170.0 (0.514)		170.0 (0.480)		235.0 (0.518)		260.0 (0.498)
Spleen		4.5 (0.0136)		3.5 (0.00989)		7.0 (0.0154)		3.4*(0.00651)
Lung	{ l r	160.0 (0.483)		235.0 (0.664)		315.0 (0.694)		300.0 (0.575)
Stomach		165.0 (0.498)		260.0 (0.734)		255.0 (0.562)		350.0 (0.670)
Intestine		500.0 (1.511)		500.0 (1.412)		750.0 (1.652)		800.0 (1.533)
Liver		2000.0 (6.042)		2050.0 (5.791)		2400.0 (5.286)		2600.0 (4.981)
Pancreas		950.0 (2.870)		900.0 (2.542)		1150.0 (2.533)		1350.0*(2.586)
Kidney	{ l r	100.0 (0.302)		95.0 (0.268)		135.0 (0.297)		110.0*(0.211)
Adrenal	{ l r	137.0 (0.414)		120.0 (0.339)		150.0 (0.330)		
Thyroid		125.0 (0.378)		115.0 (0.325)		145.0 (0.319)		
Tymus		1.4 (0.00423)		1.6 (0.00452)		1.3 (0.00286)		5.3 (0.0102)
Pituitary		6.1 (0.0184)		1.2 (0.00339)		1.3 (0.00286)		
Testis	{ l r	50.0 (0.151)		5.0 (0.0141)		5.6 (0.0123)		
Epididymis	{ l r			36.0 (0.102)		37.2 (0.0819)		0.4 (0.000766)
Ovary	{ l r	2.0 (0.00604)		0.3 (0.000847)		0.6 (0.00132)		
Mammary gland	{ l r	0.3 (0.000906)		4.1 (0.0116)				6.3 (0.0121)
Blubber		14.6 (0.0441)		3.5 (0.00989)		4.8 (0.0106)		0.8 (0.00153)
Skeletal muscle		17.9 (0.0541)		1.2 (0.00339)		220.0 (0.485)		270.0 (0.517)
				1.4 (0.00395)		220.0 (0.485)		300.0 (0.575)
		8650.0 (26.133)		10170.0 (28.729)		12250.0 (26.982)		13320.0 (25.52)
		12700.0 (38.369)		17200.0 (48.588)		18400.0 (40.529)		22070.0 (42.28)

* calculated from the value after preservation in 10% formalin solution.

Figures in parenthesis indicate percentages of body weight.

TABLE 2. BODY LENGTH, BODY WEIGHT AND ORGAN WEIGHTS OF
 4 SPECIMENS OF *PLATANISTA GANGETICA*.

Specimen field number	No. 16	No. 18	No. 19	No. 20
Body length	120.5 cm	126.0 cm	122.0 cm	199.0 cm
Sex	F	F	M	M
Body weight	17.0 kg	17.0 kg	22.5 kg	84.0 kg
Brain	236.0 g (1.388%)			
Heart	40.0* (0.235)	47.6 (0.280)	49.6 (0.220)	210.9 (0.251)
Spleen	3.0* (0.0176)		1.7 (0.00756)	8.4 (0.010)
Lung {l	170.0* (1.000)	101.8 (0.599)	114.0 (0.507)	700.0 (0.833)
{r	154.0* (0.906)	100.8 (0.593)	131.0 (0.582)	610.0 (0.726)
Stomach	308.0* (1.812)			
Intestine				
Liver	460.0* (2.706)	420.0 (2.471)	300.0 (1.333)	1120.0 (1.333)
Pancreas	15.0* (0.0882)		10.2 (0.0453)	34.3 (0.0408)
Kidney {l	45.0* (0.265)	30.7 (0.181)	26.2 (0.116)	109.0 (0.130)
{r	42.0* (0.247)	36.2 (0.213)	27.8 (0.124)	101.5 (0.121)
Adrenal {l		0.3 (0.00176)		3.6 (0.00429)
{r		0.6 (0.00352)	0.5 (0.00222)	3.2 (0.00381)
Thyroid		1.0 (0.00588)	3.0 (0.0133)	
Thymus				
Pituitary				
Testis {l				520.0 (0.619)
{r				590.0 (0.702)
Epididymis {l				
{r				
Ovary {l	0.4* (0.00235)	0.8 (0.00471)		
{r	0.4* (0.00235)	0.8 (0.00471)		
Mammary gland {l				
{r				

* calculated from the value after preservation in 10% formalin solution.
 Figures in parenthesis indicate percentages of body weight.

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