

BRAIN WEIGHT IN VERTEBRATES

BY ALEŠ HRDLIČKA

The following data on brain weight in vertebrates are a contribution to the interesting but not yet ample enough material of similar nature that has been gathered in various parts of the world. Since the writer assumed the charge of the Division of Physical Anthropology in the U. S. National Museum, two years ago, one of the main objects followed was the gradual establishment of a reference brain collection, human and comparative. Due to the generous aid received from the National Zoological Park in Washington City, the division of Mammals and of Birds in the Museum, the Bureau of Animal Industry of the Department of Agriculture, Mr. E. S. Schmidt, the principal animal dealer in the city, and with what was received from various hunters, it has been possible to examine and in most instances preserve the brains of several hundred mammals, birds, and other animals. With these were obtained, wherever feasible, certain records, among which the condition and weight of the body, the sex, the age or stage of life, and the weight of the brain. In addition, Mr. Geo. B. Turner, the Museum taxidermist, furnished a number of measurements of the bodies.

The brains were always weighed without the dura mater and immediately after extraction. No pathological specimens, which fortunately are very rare in animals, were included in the series.

The data have now accumulated so that they may prove of service to others and are therefore here given. They were gathered with due care and so far as they go should prove reliable. The identifications were kindly furnished by Mr. W. L. Hahn and Dr. C. W. Richmond, of the National Museum. A difficulty was found in some cases in concluding as to the stage of life of the animal, but the possible remaining errors on this account can not be numerous. The term "adult" in the records is employed synonymously with "full grown." The considerable source of difficulty and error met with in weighing human brains, namely the various grades of congestion of the organ, is practically absent in the smaller and but rarely encountered among the larger animals. It was present, in a marked degree, in one specimen only (a harbor seal).

The records are arranged in two categories. In the first are in-

cluded all the animals the brains of which were weighed, irrespective of the age of the animal or the condition of its body. In the second class, which is naturally much reduced in number, only those animals are included which were full grown and in which the state of the nutrition of the body was fair; and here the groups have been arranged on the basis of the average brain-body relation only.

The data reveal a number of points which incite comment, but this may better be postponed until the series can be sufficiently increased.

To facilitate reference I append a brief bibliography, limited to the principal contributions to the subject of brain weight in animals; in the works cited are mentioned a number of minor contributions.

The numbers preceding the names of the animals are the catalogue numbers of the brains preserved in the Division of Physical Anthropology in the U. S. National Museum.

I. ARRANGEMENT BY SPECIES.

MAMMALS.

CERCOPITHECIDÆ: *Old World Monkeys.*

No. and Species.	Sex.	Stage of Life.	State of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimensions of Animal.		
							Length, Point of Nose to Point of Tail.	Length of Tail.	Length of Hind Foot.
224,778 <i>Macacus fascicul.</i>	♂	apparently adult.	medium.	4989.5 gr.	70.6 gr.	1 : 71			
224,770 <i>Macacus fascicul.</i>	♀	“ “	“	3855.5	60.3	1 : 64			
224,775 <i>Macacus fascicul.</i>	♂	adult.	“	—	71.—	—			
224,767 <i>Macacus fascicul.</i>	♂	“ “	“	—	67.—	—			
224,766 <i>Macacus fascicul.</i>	♂	adult or nearly so.	—	—	63.5	—			
228,085 <i>Macacus fascicul.</i>	♂	adult.	slightly emaciated.	4309.	69.75	1 : 62			
224,806 <i>Cercocebus fulig.</i>	♂	adult.	“	3629.—	112.—	1 : 32			
228,117 <i>Cercocebus fulig.</i>	♂	“	“	3855.5	108.—	1 : 36			
224,959 <i>Cercocebus fulig.</i>	♀	“	emaciated.	3175.	105.—	1 : 30			
228,080 <i>Cercopithecus callitr.</i>	♂	“	medium.	3629.—	71.9	1 : 50			
224,830 <i>Cynopithecus niger</i>	♂	“	“	3402.—	110.—	1 : 31			
224,811 <i>Papio doguerra</i>	♂	“	somewhat emaciated.	4989.5	182.—	1 : 27			
228,063 <i>Papio hamadr.</i>	♂	“	“	12020.5	142.—	1 : 85	104 cm.,	44 9 cm.,	17.5 cm.
224,745 <i>Papio cynoceph.</i>	♀	“	“	5443.	162.—	1 : 34			

CEBIDÆ: *New World Monkeys.*

228,110 <i>Ateles Geoffr.</i>	♂	adult.	somewhat emaciated.	1920.—	95.5	1 : 21			
224,799 <i>Ateles Geoffr.</i>	♂	“	“	1835.—	91.—	1 : 20			
<i>Cebus hypol.</i>	♂	“	“	1126.—	68.—	1 : 17			
224,812 <i>Cebus hypol.</i>	♂	“	emaciated.	880.—	75.—	1 : 12			
224,829 <i>Cebus hypol.</i>	♂	“	somewhat emaciated.	930.—	66.—	1 : 14			

HAPALIDÆ: *Marmosets.*

224,969 <i>Marmoset</i>	♂	adult.	medium.	204.—	7.35	1 : 28			
224,970 <i>Marmoset</i>	♂	“	nearly medium.	172.—	7.1	1 : 24			
224,971 <i>Marmoset</i>	♀	“	medium.	219.—	8.8	1 : 24			
224,961 <i>Marmoset</i>	♀	“	“	218.—	7.77	1 : 28			

I. ARRANGEMENT BY SPECIES.—*Continued.*

MAMMALS.

LEMURIDÆ: *Lemurs.*

No. and Species.	Sex.	Stage of Life.	Stage of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimension of Animal.		
							Length, Point of Nose to Point of Tail.	Length of Tail.	Length of Hind Foot.
224,967 Marmoset	♀	adult.	somewhat emaciated.	169.5 gr.	7.85 gr.	1: 22 gr.			
Midas cecip.	♀	"	"	290.—	8.8	1: 33			
228,139 Lemur macaco	♂	"	medium.	1899.—	25.5	1: 75			
228,106 Lemur macaco	♂	"	"	2170.—	21.8	1: 99.5	97. cm.,	53. cm.,	11. cm.
228,143 Lemur varius	♀	near adult.	"	1250.—	24.—	1: 52			
224,807 Lemur varius	♀	adult.	—	—	34.5	—			

PHOCIDÆ: *Seals.*

Phoca vitulina	♂	adult.	medium.	13.154.—	229.5	1: 57	102. cm.,	10. cm.,	24. cm.
228,076 Phoca vitulina	♂	"	"	12.247.—	214.5	1: 57			
224,748 Phoca vitulina	♀	"	"	12.701.—	259.—	1: 49			(Brain congested.)
228,112 Phoca vitulina	♀	"	"	13.835	225.—	1: 61			
224,803 Phoca vitulina	?	"	somewhat emaciated.	—	247.—	—			
Phoca vitulina	♀	"	near medium.	11.113	214.5	1: 51			

CANIDÆ: *Wolfs, Dogs, Jackals, Foxes.*

224,744 Canis occidental.	♂	30 days.	medium.	860.—	46.—	1: 19	} same litter.
224,800 Canis occidental.	♀	33 "	above medium.	1848.—	56.53	1: 32	
224,801 Canis occidental.	♂	39 "	"	1280.—	59.85	1: 21	
224,802 Canis occidental.	♂	40 "	"	1090.—	46.3	1: 24	
224,824 Canis nubilis	♂	adult.	"	29.030	115.5	1: 251	
228,107 Canis dingo	♂	4 days.	"	247.2	9.44	1: 26	} same litter.
228,108 Canis dingo	♀	4 "	"	237.—	9.25	1: 26	
Canis dingo	♀	4 "	"	243.—	9.55	1: 25	
Canis dingo	♀	4 "	"	247.5	9.05	1: 27	
228,119 Canis dingo	♀	20 "	"	748.—	25.07	1: 30	
Dog: fox-terrier	♂	young.	"	1417.5	53.—	1: 27	
224,910 Dog: fox-terrier	♂	"	"	1185.—	53.—	1: 22	
224,825 Dog: fox-terrier	♀	adult.	"	7938.—	67.—	1: 118	
228,082 Dog: fox-terrier	♀	"	"	6577.—	65.7	1: 100	

I. ARRANGEMENT BY SPECIES.—*Continued.*

MAMMALS.

CANIDÆ: *Wolfs, Dogs, Jackals, Foxes.*

No. and Species.	Sex.	Stage of Life.	State of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimensions of Animal.		
							Length, Point of Nose to Point of Tail.	Length of Tail.	Length of Hind Foot.
224,826 Black and tan terrier	♂	adult	medium.	5670.—gr.	70.—gr.	1 : 81			
224,814 Black and tan terrier	♀	"	"	5897.—	61.5	1 : 96			
224,913 Irish terrier	♀	"	"	9526.—	73.—	1 : 130			
224,822 Retriever	♂	"	"	13.154	90.5	1 : 145			
224,950 Cuban Poodle	♂	young.	"	496.—	35.8	1 : 14			
228,118 Canis mesomelas	♂	adult.	"	6124.—	60.6	1 : 101	97. cm.,	27. cm.,	18 cm.
224,796 Vulpes pribilof.	♀	4 hours.	"	397.—	22.4	1 : 18			
228,060 Vulpes pribilof.	?	85 days.	"	760.—	37.5	1 : 20			
224,804 Vulpes pribilof.	♂	adult.	"	—	42.7	—			
224,395 Vulpes pribilof.	♀	"	emaciated.	—	40.—	—			
224,808 Vulpes velox	♂	33 days.	medium.	1910.—	17.—	1 : 112			
224,816 Vulpes velox	♂	adult.	slightly emaciated.	2758.—	33.35	1 : 85			

FELIDÆ: *Cats and Lynxes.*

224,810 Felis concolor	♂	adult.	medium.	54.432	154.—	1 : 353	183.3,	62.2,	30.3.
228,055 Felis concolor	♀	"	"	—	137.5	—			
228,136 Felis jagouar.	♀	"	somewhat emaciated.	2268.—	40.	1 : 57			
228,122 Felis comitli	♀	"	"	2722.—	41.9	1 : 65			
228,138 Felis serval	♂	"	medium.	11.340	54.1	1 : 210			
228,089 Felis serval	♀	near adult.	"	7.484	50.5	1 : 148			
228,123 Felis pardalis	♂	adult	"	8618.	62.7	1 : 137			
224,815 Felis pardalis	♂	or near adult.	"	10.433	63.5	1 : 164			
228,134 Felis onca	♂	"	"	13.835	159.5	1 : 87			
228,131 Felis onca	♂	adolescent.	"	8.436	121.—	1 : 70			
224,380 Felis onca	♂	near adult.	"	—	165.—	—			
224,381 Felis onca	?	"	"	—	160.—	—			
228,154 Lynx canad.	♂	adult.	"	14.969	69.5	1 : 215			
224,809 Lynx rufus	♂	"	"	6.350	65.—	1 : 98	86.2,	15.1,	17.—

I. ARRANGEMENT BY SPECIES.—*Continued.*

MAMMALS.

FELIDÆ: *Cats and Lynxes.*

No. of Species.	Sex.	Stage of Life.	State of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimensions of Animal.		
							Length, Point of Nose to Point of Tail.	Length of Tail.	Length of Foot.
228,129 Lynx rufus texensis	♀	adult.	emaciated.	1719.5	56.7	1 : 30			
Lynx caracal	♂	2 days.	medium.	175.—	8.6	1 : 20			
224,908 maltese cat (domestic)	♀	young.	“	569.—	23.5	1 : 24			
224,953 maltese cat (domestic)	♂	adult.	emaciated.	1392.—	29.65	1 : 47			
224,948 maltese cat (domestic)	♀	“	medium.	1930.—	21.55	1 : 89			

URSIDÆ: *Bears.*

224,382 Ursus, American.	♂	adult.	medium.	—	230.—	—	149.9 cm.,	12.7 cm.,	—
224,742 U. horribilis	♂	“	“	149.688	389.—	1 : 382	198.12,	—	—
224,386 U. torquatus	♂	adult. (3 years).	“	69.860	269.—	1 : 260			
224,387 U. torquatus	♂	adult. (3 years).	somewhat emaciated.	—	282.—	—	132.3,	16.3,	—
228,150 Melursus ursinus	♀	adult.	medium.	136.080	267.—	1 : 510			
224,385 U. japonicus	♂	adolescent	“	—	230.—	—	89.—	5.—	—
224,831 Helarctor malay.	♀	adult.	“	45.020	385.5	1 : 117			

PROCYONIDÆ: *Racoons, etc.*

224,398 Procyon lotor	♀	young.	medium.	1902.—	39.—	1 : 49	48.7,	23.5,	—
228,125 Procyon lotor	♀	adult.	“	5000.—	36.1	1 : 141			
224,817 Procyon cancriv.	♀	“	“	4819.5	61.5	1 : 78			
228,127 Nasua rufa	♀	“	“	3175.—	34.—	1 : 93			
228,103 Potos caudivolvulus	♂	adult.	medium.	1863.—	35.1	1 : 53	81.—	40.—	11.5

MUSTELIDÆ: *Weasels, Otters, etc.*

224,798 Mephitis meph.	?	adult or near.	medium. somewhat	380.—	6.52	1 : 58			
224,964 Putorius nigripes	♀	adult.	emaciated.	449.—	7.8	1 : 58			
224,798 Putorius putor.	♂	“	medium.	915.—	7.87	1 : 116			

ERINACEIDÆ: *Hedgehogs.*

224,797 Erinaceus europ.	♀	adult.	medium.	453.—	3.23	1 : 140			
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I. ARRANGEMENT BY SPECIES.—*Continued.*

MAMMALS.

SORICIDÆ: *Shrews.*

No. and Species.	Sex.	Stage of Life.	State of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimensions of Animal.		
							Length, Point of Nose to Point of Tail.	Length of Tail.	Length of Hind Foot.
Blarina brevicauda	♀	adult.	medium.	14.—gr.	0.6 gr.	1 : 23 gr.			

LEPORIDÆ: *Hares and Rabbits.*

224,428	Rabbit, dom., ordinary	?	young.	medium.	376.—	6.9	1 : 55		
224,429	Rabbit, dom., ordinary	?	"	"	434.—	6.8	1 : 63		
224,427	Rabbit, dom., ordinary	?	adult.	"	1732.—	11.5	1 : 151		
	Rabbit, wild, Md.	?	young.	"	157.—	4.8	1 : 33		
224,974	Rabbit, wild, South Va.	♀	adult.	"	1210.5	9.14	1 : 132		
224,438	Rabbit, wild, South Va.	♂	"	"	1247.5	8.7	1 : 143		
224,436	Belgian hare	♀	near adult.	"	1396.—	8.—	1 : 175		
	Belgian hare	♂	" "	"	1545.—	10.67	1 : 145		
	" "	♀	" "	"	1771.—	8.8	1 : 201		
224,943	Belgian hare	♀	adult.	"	1890.—	9.38	1 : 201		
	Belgian hare	♀	"	"	1975.—	9.8	1 : 202		
	" "	♂	"	"	2055.—	9.18	1 : 224		
	" "	♀	"	"	2152.—	10.51	1 : 205		
	" "	♀	"	"	2431.—	9.9	1 : 246		
	" "	♂	"	somewhat emaciated.	2570.—	13.35	1 : 193		
224,434	Belgian hare	♀	"	medium.	2987.—	10.5	1 : 285		
	Belgian hare	♀	"	"	3345.—	11.3	1 : 296		

CAVIDÆ: *Cavies.*

Cavia cutleri	?	?	medium.		91.5	2.95	1 : 31		
" "	"	"	"		131.—	2.95	1 : 44		
" "	"	"	"		138.—	3.25	1 : 42		
" "	"	"	"		200.—	3.42	1 : 58		
" "	"	"	"		211.—	3.85	1 : 55		
" "	"	"	"		238.—	4.15	1 : 57		
" "	"	"	"		248.—	3.77	1 : 66		
" "	"	"	"		265.—	3.8	1 : 70		
" "	"	"	"		295.—	3.65	1 : 81		
" "	"	"	"		301.—	4.7	1 : 64		
" "	"	"	"		305.—	4.15	1 : 73		
" "	"	"	"		337.—	4.28	1 : 79		
" "	"	"	"		353.—	4.5	1 : 73		
" "	"	"	"		451.—	4.8	1 : 94		
" "	"	"	"		491.—	4.75	1 : 103		
" "	"	"	"		513.—	4.57	1 : 112		
224,431	Cavia cutleri	"	"	"	544.—	4.9	1 : 111		
224,935	Cavia cutleri	"	"	"	700.—	4.35	1 : 161		

I. ARRANGEMENT BY SPECIES.—*Continued.*

MAMMALS.

DASYPROCTIDÆ: *Agoutis.*

No. of Species.	Sex.	Stage of Life.	Stage of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimensions of Animal.		
							Length, Point of Nose to Point of Tail.	Length of Tail.	Length of Hind Foot.
228,090 <i>Dasyprocta aguti</i>	♂	adult.	medium.	1724.5	19.1	1 : 90			
228,114 <i>Myoprocta acouchy</i>	♀	adult.	medium.	782.—	9.9	1 : 79			

HYSTRICIDÆ: *Porcupines.*

228,132 <i>Hystrix cristata</i>	♀	adult.	medium.	4763.—	24.2	1 : 197			
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MURIDÆ: *Rats, Mice, etc.*

<i>Mus musculus</i>	♂	adult.	medium.	19.5	0.42	1 : 46			
224,914 <i>Mus musculus</i>	♂	"	"	16.85	0.45	1 : 37			
<i>Mus musculus</i>	♂	"	"	19.5	0.42	1 : 46			
" "	♂	"	"	14.75	0.5	1 : 30			
" "	♂	"	"	18.2	0.48	1 : 38			
" "	♂	"	"	16.5	0.39	1 : 42			
'Japanese mouse'	♂	adult.	medium.	7.85	0.35	1 : 22			
" "	♂	"	"	7.25	0.33	1 : 22			
White "	♀	"	"	11.35	0.4	1 : 28			
Black and White mouse	♀	"	"	8.8	0.23	1 : 38			
<i>Mus rattus</i>	♀	adult.	medium.	99.5	1.27	1 : 78			
224,966 <i>Mus norvegicus</i>	♀	"	"	543.5	2.6	1 : 208			
224,987 <i>Arvicola agrestis</i>	♂	"	"	42.5	0.9	1 : 47			
224,976 <i>Fiber zibethicus</i>	♂	"	"	1260.—	5.59	1 : 225			

GEOMYIDÆ: *Pocket Gophers.*

224,951 <i>Geomys bursarius</i>	♂	adult.	medium.	108.—	2.83	1 : 38			
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HETEROMYIDÆ: *Kangaroo Rats.*

228,144 <i>Perodipus richards.</i>	♂	adult.	somewhat emaciated.	989.—	11.97	1 : 83			
<i>Perodipus richards.</i>	♂	young.	medium.	289.—	7.3	1 : 40			

OCTODONTIDÆ: *Spiny Mice.*

228,135 <i>Capromys pilor.</i>	♂	adult.	medium.	4989.5	11.9	1 : 450			
222,600 <i>Capromys pilor.</i>	♂	"	somewhat emaciated.	2782.5	11.1	1 : 251			
228,133 <i>Capromys pilor.</i>	♀	"	medium.	3429.—	10.55	1 : 344			

I. ARRANGEMENT BY SPECIES.—*Continued.*

MAMMALS.

SCIURIDÆ: *Squirrels and Marmots.*

No. and Species.	Sex.	Stage of Life.	State of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimensions of Animal.		
							Length, Point of Nose to Point of Tail.	Length to Tail.	Length of Hind Foot.
224,917 Sciurus rufiventer	♀	adolescent	medium.	401.—	8.85	I : 45			
Sciurus rufiventer	♀	“	“	403.—	7.7	I : 52			
“ “	♀	adult.	“	522.5	8.95	I : 58			
“ “	♀	“	“	559.—	9.15	I : 61			
224,915 Sciurus rufiventer	♂	“	“	578.—	9.05	I : 64			
Sciurus rufiventer	♀	“	“	584.—	8.4	I : 70			
“ “	♀	“	“	650.—	9.2	I : 71			
Sciurus carolin.	♀	adolescent	“	300 —	6.44	I : 47			
224,437 Sciurus carolin.	♀	“	“	312.—	6.7	I : 47			
Sciurus carolin.	♀	“	“	321.—	6.83	I : 47			
“ “	♀	adult	“	364.—	7.02	I : 52			
“ “	♀	or near.	“						
“ “	♀	adult.	“	399.—	7.5	I : 53			
“ “	♀	“	“	401.—	7.7	I : 52			
“ “	♀	“	“	404.5	7.6	I : 53			
“ “	♀	“	“	410.—	6.55	I : 63			
“ “	♀	“	“	438.—	7.2	I : 61			
“ “	♀	“	“	445.—	7.84	I : 57			
“ “	♀	“	“	459.5	7.15	I : 64			
“ “	♀	“	“	468.—	7.03	I : 67			
“ “	♀	“	“	470.—	8.22	I : 57			
“ “	♀	“	“	502.—	7.67	I : 65			
“ “	♀	“	“	502.—	7.7	I : 65			
“ “	♀	“	“	510.—	6.8	I : 75			
“ “	♀	“	“	514.—	7.58	I : 68			
“ “	♀	“	“	522.5	8.95	I : 58.4			
“ “	♀	“	“	595.5	8.25	I : 72			
224,901 Sciurus hudson.	♂	adolescent	“	100.—	4.09	I : 24.5			
Sciurus hudson.	♀	8 months.	“	102.5	3.82	I : 27			
“ “	♀	“	“	140.—	4.05	I : 35			
“ “	♀	adolescent	“	123.—	3.94	I : 31			
“ “	♀	adult,	“	139.—	3.97	I : 35			
“ “	♀	or near.	“						
“ “	♀	adult.	“	145.—	3.87	I : 37			
“ “	♀	“	“	147.—	4.—	I : 37			
224,446 Sciurus hudson.	♂	“	“	152.5	4.43	I : 34			
224,936 Sciurus hudson.	♀	“	“	158.—	4.1	I : 39			
224,448 Sciurus hudson.	♂	“	“	173.5	4.02	I : 43			
Sciurus hudson.	♀	“	“	179.—	4.2	I : 42.6			
Sciuropterus volans	♂	young.	“	32.—	2.6	I : 12			
Sciuropterus volans	♀	adolescent	“	51.—	1.65	I : 31			
Sciuropterus volans	♀	adult.	“	55.—	1.84	I : 30			
224,447 Sciuropterus volans	♂	“	“	58.3	1.92	I : 30			

I. ARRANGEMENT BY SPECIES.—*Continued.*

MAMMALS.

SCIURIDÆ: *Squirrels and Marmots.*

No. of Species.	Sex.	Stage of Life.	State of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimensions of Animal.		
							Length, Point of Nose to Point of Tail.	Length of Tail.	Length of Hind Foot.
224,715 Sciuropterus volans	♂	adult.	medium.	59.—	2.—	1 : 29.5			
Sciuropterus volans	♀	“	“	60.5	2.1	1 : 29			
Sciuropterus volans	♂	“	“	61.5	1.96	1 : 31			
Sciuropterus volans	♂	“	“	64.—	1.92	1 : 33			
224,977 Sciuropterus volans	♂	“	quite fat.	78.7	1.8	1 : 44			

BOVIDÆ: *Sheep, Cattle, etc.*

224,932 Sheep, Merino	♂	adult, or near.	medium.	23.134	91.—	1 : 254			
224,998 Sheep, Shropshire	♀	9 months.	“	32.206	112.8	1 : 285			
224,927 Sheep, Shropshire	♀	adult, or near.	“	34.474	98.—	1 : 352			
228,075 Ovis tragel.	♂	1 year.	medium.	47.174 gr.	215.—	1 : 219			
228,151 Ovis tragel.	♀	adult.	“	56.700	209.5	1 : 271			
228,073 Ovis canad.	♀	adolescent.	somewhat emaciated.	26.536	198.—	1 : 134			
228,065 Antelope cervicapra	♂	young.	medium.	10.093	98.5	1 : 102			
228,068 Antelope cervicapra	♂	adult.	“	—	114.5	—			
228,155 Boselaphus tragocam.	♂	“	—	—	258.—	—			
224,820 Bison bison	♂	4 years.	medium.	—	529.—	—	213 cm.	—	—

ANTILOCAPRIDÆ: *Prong Bucks.*

228,111 Antilocapra amer.	♂	adult.	medium.	34.474	130.2	1 : 265			
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CERVIDÆ: *Deer, etc.*

224,743 Alces amer.	♂	adult.	medium.	272.160	407.—	1 : 669	244.	—	—
228,092 Alces amer.	♂	adult or near.	“	—	337.2	—	226.	—	—
224,819 Alces amer.	♀	adult.	“	—	406.—	—	236.2	—	—
224,805 Cervus canadens.	♂	new born.	“	14.969	209.—	1 : 71			
228,059 Cervus canadens.	?	young.	—	—	374.8	—			
228,074 Cervus canadens.	♂	7 years.	—	—	461.1	—			

I. ARRANGEMENT BY SPECIES.—*Continued.*

MAMMALS.

CERVIDÆ : *Deer, etc.*

No. and Species.	Sex.	Stage of Life.	State of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimensions of Animal.		
							Length, Point of Nose to Point of Tail.	Length of Tail.	Length of Hind Foot.
228,086 <i>Odocoileus virgin.</i>	♀	young.	medium.	14.515	133.—	1 : 109			
228,087 <i>Odocoileus virgin.</i>	♀	adult.	somewhat emaciated.	33.566	174.7	1 : 192			
224,828 <i>Odocoileus virgin.</i>	♀	"	medium.	—	175.5	—			
224,821 <i>Odocoileus virgin.</i>	♀	"	"	—	203.—	—			
224,823 <i>Odocoileus virgin.</i>	♂	"	"	—	219.5	—			
224,391 <i>Odocoileus hemion.</i>	♂	young.	"	9412.—	116.5	1 : 81			
228,054 <i>Odocoileus hemion.</i>	♀	"	"	—	78.—	—			
228,078 <i>Odocoileus hemion.</i>	♀	adult.	"	—	128.2	—	101.—cm.,	12.cm.,	36.—cm.
228,072 <i>Odocoileus hemion.</i>	♀	"	emaciated.	10.319	112.—	1 : 92	96.cm.,	11.5cm.,	—cm.
228,066 <i>Capreolus caprea</i>	♀	young.	somewhat emaciated.	8165.—	85.—	1 : 96			
228,084 <i>Capreolus caprea</i>	♀	adolescent.	medium.	13.154	90.—	1 : 146			
228,113 <i>Capreolus caprea</i>	♀	adult, or near.	"	12.706	94.5	1 : 134			
<i>Capreolus caprea</i>	♂	adult.	"	14.062	93.—	1 : 151			
228,088 <i>Capreolus caprea</i>	♀	adult.	medium.	15.422	103.5	1 : 149	105 cm.,	—,	35 cm.
228,140 <i>Odocoileus truei.</i>	♂	"	"	34.927	127.4	1 : 274			
224,389 <i>Odocoileus truei.</i>	♂	"	"	39.010	129.—	1 : 302			
228,147 <i>Odocoileus columb.</i>	♀	"	somewhat emaciated.	33.113	188.3	1 : 176			
228,079 <i>Cervus dama.</i>	♀	"	medium.	37.195	224.5	1 : 166			

DICOTILIDÆ : *Peccaries.*

228,070 <i>Tayassu tajac.</i>	♀	adult.	medium.	19.618	101.—	1 : 194			
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SUIDÆ : *Pigs.*

224,904 <i>Sus</i> famil.	?	adolescent	quite fat.	90.720	130.—	1 : 697			
224,907 <i>Sus scrofa</i>	♂	adult.	medium.	—	186.—	—			

DASYPOBIDÆ : *Armadillos.*

224,393 <i>Tatu novemcinctum</i>	♂	adult.	medium.	4593.—	14.—	1 : 328			
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I. ARRANGEMENT BY SPECIES.—*Continued.*

MAMMALS.

BRADIPODIDÆ: *Sloths.*

No. of Species.	Sex.	Stage of Life.	State of Nutrition.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.	Dimensions of Animal.		
							Length, Point of Nose to Point of Tail.	Length of Tail.	Length of Hind-Foot.
222,598	?	adolescent	medium.	907.—	24.2	1 : 37			
Cyclopes didactyl.									

MACROPODIDÆ: *Kangaroos.*

224,392	♂	adolescent	medium.	2722.—	12.7	1 : 214			
Onychogale frenata									
224,397	♂	adult, or near.	"	—	14.—	—			
Onychogale frenata									
228,142	♂	adult.	"	5216.—	16.2	1 : 322			
Onychogale frenata									
228,061	♀	adult, or near.	"	—	29.1	—			
Macropus ceim.									
224,388	♀	adult.	"	10.206	37.—	1 : 276			
Macropus, spec. ?									
228,148	♂	"	"	11.794	34.5	1 : 342			
Petrogale									
228,149	♂	"	"	11.795	39.8	1 : 296			
Petrogale									

PHALANGERIDÆ: *Phalangers.*

228,069	?	adolescent.	medium.	825.— gr.	8.97 gr.	1 : 92			
Trichosurus vulpec.									
228,128	♀	adult, or near.	"	1371.5	9.7	1 : 141			
Trichosurus vulpec.									
228,141	♂	adult.	"	1898.—	11.—	1 : 172.5			
Trichosurus vulpec.									
222,599	♂	adult, or near.	"	3175.—	12.9	1 : 246			
Trichosurus fulig.									
228,115	♀	adult.	"	4196.—	12.27	1 : 342	86.—cm.,	33.5cm.,	8. cm.—
Trichosurus fulig.									

DASYURIDÆ: *Dasyures, etc.*

224,818	♂	adult.	medium.	355.—	4.07	1 : 87			
Dasyurus macul.									
228,120	♀	"	"	420.—	5.35	1 : 79	49.2,	21.2,	6.4
Dasyurus macul.									
228,124	♂	"	"	14.969	43.—	1 : 348			
Thylacinus cynocept.									

Lizards.

224,426	?	about half grown.	medium.	11.340	5.—	1 : 2835			
Alligator mississip.									
224,952	?	very young.	"	39.5	0.83	1 : 48			
Alligator mississip.									
?	?	very young.	"	32.—	0.56	1 : 57			
Alligator mississip.									
?	?	?	"	106.—	1.15	1 : 92			
Anolis principal.									

Snakes.

Pine snake	?	150.6 cm. long.	medium.	766.—	0.45	1 : 1702			
" "	?	181.2 cm. long.	sub-medium.	610.—	0.7	1 : 871			
Cuban tree boa	?	?	medium.	877.—	0.48	1 : 1828			

I. ARRANGEMENT BY SPECIES.

BIRDS.

PASSERIFORMES : *Corvidæ*.

Object.	Sex.	Stage of Life.	State of Body.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.
224,444 <i>Corvus brachyrhynchus</i>	?	adult.	medium.	302.0 gr.	7.3 gr.	1 : 41
<i>Corvus brachyrhynchus</i>	?	"	"	341.0	7.75	1 : 44
224,930 <i>Corvus brachyrhynchus</i>	?	"	"	352.0	7.55	1 : 47
<i>Corvus brachyrhynchus</i>	?	"	"	359.0	9.3	1 : 39
224,443 <i>Corvus brachyrhynchus</i>	?	"	"	440.0	8.9	1 : 49
224,986 <i>Corvus brachyrhynchus</i>	?	"	medium.	459.2	8.55	1 : 54
224,956 <i>Corvus brachyrhynchus</i> (Domesticated)	?	"	above medium.	1134.0	8.75	1 : 130
224,941 <i>Corvus brachyrhynchus</i> (Domesticated)	?	"	above medium.	1134.0	8.75	1 : 130
224,445 <i>Corvus monedula</i>	?	"	medium.	147.0	5.35	1 : 27
224,996 <i>Cyanocitta cristata</i>	?	"	somewhat emaciated.	88.0	2.98	1 : 30
224,956 " "	?	"	somewhat emaciated.	67.4	3.02	1 : 22
228,105 <i>Xanthura luxuosa</i>	?	"	emaciated.	44.5	2.4	1 : 19
228,052 " "	?	"	medium.	60.0	2.4	1 : 25

Fringillidæ.

224,954 <i>Acanthis cannabina</i>	?	adult.	medium.	16.8 gr.	0.69 gr.	1 : 24
<i>Passer domesticus</i>	♂	"	"	23.1	1.05	1 : 22
<i>Melospiza cinerea melodia</i>	♀	"	"	21.5	0.88	1 : 24
<i>Carpodacus purpureus</i>	♀	"	"	19.7	0.85	1 : 23
Gold Finch	?	?	somewhat emaciated.	9.08	0.6	1 : 15
" "	?	?	somewhat emaciated.	10.9	0.58	1 : 19
" "	?	adult.	somewhat emaciated.	13.2	0.6	1 : 21
" "	?	?	somewhat emaciated.	13.3	0.55	1 : 24
" "	?	?	somewhat emaciated.	14.45	0.7	1 : 21
Bull "	?	?	somewhat emaciated.	25.1	0.96	1 : 26
<i>Serinus</i>	?	?	somewhat emaciated.	11.23	0.53	1 : 20
"	?	?	somewhat emaciated.	11.35	0.53	1 : 21
"	?	?	somewhat emaciated.	11.5	0.60	1 : 19
"	?	?	somewhat emaciated.	11.86	0.66	1 : 18
"	?	?	medium.	12.55	0.53	1 : 24
"	?	?	"	13.4	0.58	1 : 23
"	?	?	"	13.5	0.59	1 : 23
"	?	?	"	14.02	0.52	1 : 27
"	?	adult.	"	14.2	0.65	1 : 22

I. ARRANGEMENT BY SPECIES. — *Continued.*

BIRDS.

Fringillidæ.

Object.	Sex.	Stage of Life.	State of Body.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.
224,903 <i>Serinus</i>	?	?	medium.	14.2 gr.	0.57 gr.	1 : 25
<i>Serinus</i>	?	?	"	14.49	0.59	1 : 25
224,931 <i>Serinus</i>	?	adult.	"	14.6	0.56	1 : 26
<i>Serinus</i>	?	"	"	16.0	0.66	1 : 24
"	♂	"	"	16.3	0.71	1 : 23
"	?	"	"	16.45	0.6	1 : 27
"	?	?	"	—	0.75	—
"	♂	adult.	"	17.9	0.72	1 : 25
"	♂	young.	"	11.2	0.7	1 : 16
<i>Cardinalis cardinalis</i>	♂	adult.	"	43.5	1.45	1 : 30
228,098 <i>Paroaria larvata</i>	?	"	"	24.5	1.09	1 : 23
<i>Paroaria larvata</i>	?	"	"	26.6	1.25	1 : 21
228,097 <i>Paroaria larvata</i>	?	"	"	28.0	1.15	1 : 24
228,099 <i>Paroaria cucullata</i>	?	"	"	29.0	1.15	1 : 25
<i>Paroaria cucullata</i>	?	"	"	31.0	1.15	1 : 27
"	?	"	"	31.2	1.07	1 : 29
"	?	"	"	32.5	1.30	1 : 25
"	?	"	"	33.9	1.27	1 : 27
"	?	"	"	35.2	1.32	1 : 27
"	?	"	"	35.5	1.32	1 : 26
"	?	"	"	38.0	1.18	1 : 32
<i>Paroaria</i>	?	?	"	26.6	1.12	1 : 24
224,934 <i>Paroaria</i>	♀	adult.	"	30.2	1.18	1 : 26
224,450 <i>Zonotrichia albicollis</i>	♂	"	"	31.6	1.07	1 : 30
<i>Junco hyemalis</i>	?	"	"	17.7	0.86	1 : 21

Ploceidæ.

<i>Sporaeginthus amandava</i>	♂	adult.	medium.	5.2 gr.	0.39 gr.	1 : 13
"	♀	"	"	6.2	0.42	1 : 15
"	♀	"	"	6.7	0.45	1 : 15
224,975 <i>Munia</i>	?	"	somewhat emaciated.	9.5	0.52	1 : 18
<i>Munia</i>	?	"	"	20.15	0.71	1 : 28
"	♂	"	"	30.0	0.88	1 : 34
<i>Munia oryzivora</i>	?	"	"	19.6	0.9	1 : 22
"	?	"	"	21.0	0.85	1 : 25
224,746 <i>Munia oryzivora</i>	?	"	"	21.0	0.75	1 : 28
224,940 <i>Munia oryzivora</i>	?	"	"	23.0	0.8	1 : 29
<i>Munia oryzivora</i>	?	"	medium.	20.5	0.7	1 : 29
<i>Munia malacca</i>	♂	"	"	10.8	0.56	1 : 19

Laniidæ.

228,083 <i>Lanius collurio</i>	?	adult.	somewhat emaciated.	64.0 gr.	2.38 gr.	1 : 27
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Alaudidæ.

224,906 <i>Alauda arvensis</i>	?	adult.	medium.	21.9 gr.	0.7 gr.	1 : 31
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Octeridæ.

<i>Sturnella magna</i>	?	adult.	medium.	135.0 gr.	2.3 gr.	1 : 59
<i>Agelaius phoeniceus</i>	?	"	"	66.0	1.77	1 : 37

I. ARRANGEMENT BY SPECIES.—*Continued.*

BIRDS.

Sylviidae.

Object.	Sex.	Stage of Life.	State of Body.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.
224,989 <i>Sylvia atricapila</i>	?	adult.	medium.	12.9 gr.	0.75 gr.	1 : 17

Turdidae.

224,973 <i>Merula merula</i>	♂	adult.	medium.	88.0 gr.	1.6 gr.	1 : 55
224,933 <i>Kittacincla macroura</i>	?	?	somewhat emaciated.	19.6	0.9	1 : 22
<i>Aedon luscini</i>	?	?	slightly emaciated.	13.55	0.64	1 : 21
<i>Erithacus rubecula</i>	?	adult.	medium.	10.3	0.65	1 : 16
224,983 <i>Erithacus rubecula</i>	?	“	“	11.0	0.75	1 : 15
Robin (American)	♀	“	“	91.5	1.72	1 : 53

Mimidae.

<i>Mimus polyglottus</i>	♂	adult.	somewhat emaciated.	29.5 gr.	1.6 gr.	1 : 18
“	♂	?	“	29.5	1.5	1 : 20
222,442 <i>Mimus polyglottus</i>	♂	adult.	medium.	33.5	1.35	1 : 25
224,990 “	?	“	“	48.5	1.31	1 : 37
<i>Mimus polyglottus</i>	?	“	“	55.0	1.55	1 : 35

Crateropodidae.

224,992 <i>Leiothrix lutea</i>	?	adult.	medium.	16.4 gr.	1.07 gr.	1 : 15
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Paridae.

<i>Parus</i>	♂	?	medium.	9.0 gr.	0.48 gr.	1 : 19
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CORACIIFORMES : *Alcedinidae.*

228,056 <i>Dacelo gigas</i>	?	adult.	medium.	210.0 gr.	4.47 gr.	1 : 47
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COLUMBIFORMES : *Columbidae.*

224,985 <i>Columbig allina</i>	♀	adult.	medium.	30.5 gr.	0.6 gr.	1 : 51
<i>Columbig allina</i>	?	“	“	45.5	0.94	1 : 48
224,923 <i>Turtur risorius</i>	♀	“	“	109.0	1.05	1 : 104
<i>Turtledove</i>	?	“	“	72.0	1.08	1 : 67
“	?	“	“	91.5	1.35	1 : 68
224,968 <i>Ocyphaps lophotes</i>	♂	“	“	148.0	1.72	1 : 86
224,962 “ “	?	“	somewhat emaciated.	118.5	1.67	1 : 71
<i>Pigeon (domestic)</i>	?	“	medium.	188.5	1.9	1 : 99
224,978 <i>Pigeon (domestic)</i>	♂	“	“	232.5	1.97	1 : 118
<i>Pigeon (domestic)</i>	?	“	somewhat emaciated.	154.0	2.02	1 : 76
224,911 <i>Pigeon (Pigmy Ponter)</i>	♀	“	medium.	221.0	1.35	1 : 163
<i>Pigeon (Pigmy Ponter)</i>	?	“	“	227.0	1.87	1 : 121
224,918 <i>Pigeon (Pigmy Ponter)</i>	?	“	“	232.5	2.0	1 : 116
224,945 <i>Pigeon (Ice Pigeon)</i>	♂	“	“	184.0	2.12	1 : 87

I. ARRANGEMENT BY SPECIES.—*Continued.*

BIRDS.

COLUMBIFORMES: *Columbidae.*

Object.	Sex.	Stage of Life.	State of Body.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.
Pigeon (Ice Pigeon)	?	adult.	medium.	186.0	2.1	1 : 89
224,905 Pigeon (Homer)	♂	“	“	260.0	2.25	1 : 116

PSITTACI: *Psittacidae.*

Amazona panamensis	?	adult.	medium.	266.0 gr.	7.55 gr.	1 : 35
“ “	?	“	somewhat emaciated.	279.0	9.26	1 : 30
“ “	?	“	medium.	300.2	8.65	1 : 35
224,928 Amazona panamensis	?	“	“	330.0	8.45	1 : 39
Amazona panamensis	?	“	“	339.0	9.45	1 : 36
224,441 Amazona panamensis	♂	“	“	368.0	8.35	1 : 44
224,958 Amazona panamensis	?	“	somewhat emaciated.	281.5	9.46	1 : 30
224,960 Amazona panamensis	?	“	somewhat emaciated.	282.2	8.9	1 : 32
Amazona panamensis	?	“	somewhat emaciated.	292.0	9.85	1 : 30
224,980 Amazona panamensis	?	“	somewhat emaciated.	302.5	10.35	1 : 29
Amazona panamensis	?	“	quite emaciated.	270.0	9.8	1 : 28
“ oratrix	?	young.	somewhat emaciated.	49.0	2.4	1 : 20
224,955 Amazona	?	adult.	slightly emaciated.	210.0	6.85	1 : 31
224,920 Amazona leucocephala	♂	“	medium.	204.0	6.62	1 : 31
224,921 Amazona leucocephala	♂	“	“	236.5	5.8	1 : 41
224,963 Amazona leucocephala	?	“	“	247.0	5.8	1 : 43
Amazona leucocephala	?	“	“	253.0	6.8	1 : 37
224,919 Amazona leucocephala	♀	“	medium.	268.0	6.9	1 : 39
Amazona leucocephala	?	“	slightly emaciated.	162.5	6.0	1 : 27
224,926 Amazona leucocephala	?	?	slightly emaciated.	197.0	7.2	1 : 27
224,972 Amazona leucocephala	?	adult.	slightly emaciated.	269.0	8.3	1 : 32
224,947 Psittacus erithacus	♀	“	somewhat emaciated.	254.0	8.7	1 : 29
224,929 “ “	♂	“	medium.	327.0	8.67	1 : 38
224,902 “ “	?	“	“	342.0	9.75	1 : 35
224,922 Melopsittacus undulatus	?	“	“	20.7	1.2	1 : 17
224,997 Melopsittacus undulatus	?	“	“	28.0	1.4	1 : 20
Melopsittacus undulatus	?	“	slightly emaciated.	16.0	1.02	1 : 16
Paroquet ?	♀	“	medium.	188.0	6.0	1 : 31

I. ARRANGEMENT BY SPECIES.—*Continued.*

BIRDS.

PSITTACI : *Psittacide.*

Object.	Sex.	Stage of Life.	State of Body.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.
224,439 <i>Callopsittacus novæ hollandiæ</i>	♂	adult.	medium.	78.0 gr.	2.75 gr.	1 : 28
<i>Brotoperys jugularis</i>	?	"	"	37.0	1.92	1 : 29

Cacatuide.

<i>Cacatua moluccensis</i>	?	?	medium.	335.0 gr.	7.0 gr.	1 : 48
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RAPTORES : *Falconide.*

224,957 <i>Aquila chrysaetos</i>	?	adult.	medium.	—	17.1 gr.	—
224,747 " "	?	"	"	5273.1 gr.	18.6	1 : 292
224,995 <i>Buteo lineatus</i>	?	young.	"	337.0	7.4	1 : 46
<i>Buteo lineatus</i>	?	adult.	"	642.0	7.12	1 : 90
224,912 <i>Falco sparverius</i>	?	?	"	75.0	2.75	1 : 27
228,126 <i>Maricoba Hawk</i>	?	adult.	somewhat emaciated.	330.0	6.05	1 : 55

Cathartide.

224,449 <i>Cathartes aura</i>	♀	adult.	medium.	2381.4 gr.	11.6 gr.	1 : 205
224,937 " "	?	"	"	—	10.2	—
<i>Cathartes aura</i>	?	"	somewhat emaciated.	2065.0	10.8	1 : 191
" "	?	"	somewhat emaciated.	1530.0	9.85	1 : 155

Burbonide.

224,982 <i>Megascops asio</i>	♂	adult.	medium.	129.8	5.6	1 : 23
228,081 <i>Strix pratincola</i>	?	"	"	405.0	6.7	1 : 60
224,991 " "	?	"	"	419.0	8.0	1 : 52
224,981 <i>Sirnium varium</i>	?	"	"	572.5	12.5	1 : 46
224,946 " "	♂	"	"	676.0	12.1	1 : 56
<i>Nyctea nyctea</i>	?	"	"	1049.0	15.4	1 : 68
224,827 <i>Bubo virginianus</i>	?	"	"	952.0	13.65	1 : 70
228,116 " "	?	"	"	1232.5	14.42	1 : 85

STEGANOPODES : *Anhingide.*

228,053 <i>Anhinga anhinga</i>	♂	adult.	medium.	560.0 gr.	4.23 gr.	1 : 132
228,051 " "	♀	"	"	610.0	4.55	1 : 134
228,057 " "	♂	"	"	1040.0	4.45	1 : 234

HERODIONES : *Ardeide.*

228,071 <i>Florida cærulea</i>	?	adult.	medium.	178.5 gr.	3.7 gr.	1 : 48
228,091 " "	?	"	"	401.0	3.78	1 : 106
<i>Ardea herodias</i>	♂	?	"	1900.0	8.85	1 : 216
228,062 <i>Ardea herodias</i>	?	?	"	2055.0	10.2	1 : 201
228,137 <i>Ardea tricolor ruficollis</i>	?	adult.	"	324.5	3.45	1 : 94
228,153 <i>Botaurus lentiginosus</i>	?	"	"	378.0	5.15	1 : 73
228,121 <i>Botaurus lentiginosus</i>	?	"	"	429.5	4.4	1 : 98
228,813 <i>Nycticorax nævius</i>	?	"	"	420.0	7.0	1 : 60

I. ARRANGEMENT BY SPECIES.—*Continued.*

BIRDS.

Ciconiide.

Object.	Sex.	Stage of Life.	State of Body.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.
Stork	?	adult.	medium.	—	29.5 gr.	—
228,145 <i>Tantaulus loculator</i>	?	"	"	1955.3 gr.	14.85	1 : 138
224,832 " "	?	"	emaciated.	—	11.87	—

Ibidiide.

228,093 <i>Plegadis guarama</i>	♀	adult.	medium.	301.0 gr.	4.6 gr.	1 : 65
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ALECTORIDES: *Rallide.*

228,102 Rail	?	adult.	medium.	34.5 gr.	1.4 gr.	1 : 25
224,435 <i>Fulica americana</i>	?	not fully adult.	"	383.0	2.7	1 : 142
Golden Seabright Chicken	♀	?	"	302.0	2.56	1 : 118
224,942 Golden Seabright Rooster	♂	adult.	"	713.0	2.43	1 : 293
Chicken	♀	"	"	975.0	3.0	1 : 325
Rooster	♂	?	"	1508.0	3.45	1 : 437
Chicken	♀	adult.	"	2303.0	3.78	1 : 609
224,938 "Brähmer" Chicken	♀	"	above medium.	3128.0	4.22	1 : 741

GALLIFORMES: *Phasianide.*

224,432 <i>Numida cristata</i>	?	?	medium.	467.0 gr.	3.0 gr.	1 : 155
224,924 <i>Pavo cristatus</i>	♀	adult.	"	3060.0	6.7	1 : 457

Tetraonide.

224,979 <i>Lophortyx californicus</i>	?	adult.	medium.	151.8 gr.	1.22 gr.	1 : 124
<i>Lophortyx californicus</i>	?	"	somewhat emaciated.	102.0	1.5	1 : 68
<i>Calipepla squamata</i>	?	"	somewhat emaciated.	99.0	1.5	1 : 66
<i>Colinus virginianus</i>	♀	"	slightly emaciated.	94.0	1.23	1 : 76
" "	♀	"	medium.	95.0	1.23	1 : 77
" "	♀	"	"	96.0	1.15	1 : 84
" "	♀	"	"	99.0	1.22	1 : 81
" "	♀	"	"	103.0	1.12	1 : 116
" "	♀	"	"	105.0	1.31	1 : 80
" "	♀	"	"	108.0	1.37	1 : 79
" "	♀	"	"	111.5	1.22	1 : 91
" "	♀	"	"	112.0	1.18	1 : 95
" "	♀	"	"	114.6	1.23	1 : 93
" "	♀	"	"	122.0	1.16	1 : 105
" "	♀	"	"	129.0	1.22	1 : 106
" "	♀	"	"	132.0	1.2	1 : 110
" "	♀	?	"	137.0 gr.	1.25 gr.	1 : 110
" "	♀	adult.	"	139.0	1.24	1 : 112
" "	♀	"	"	146.0	1.22	1 : 120
" "	♀	"	"	147.0	1.31	1 : 112
224,909 <i>Colinus virginianus</i>	♀	"	"	153.0	1.35	1 : 113
<i>Colinus virginianus</i>	♀	"	"	160.0	1.16	1 : 138
224,433 <i>Colinus virginianus</i>	♀	"	"	198.45	1.2	1 : 165
224,994 <i>Borasa umbellus</i>	♀	"	"	299.3	2.7	1 : 111

I. ARRANGEMENT BY SPECIES.—*Continued.*

BIRDS.

LIMICOLIFORMES: *Charadriidae.*

Object.	$\frac{\%}{S}$	Stage of Life.	State of Body.	Weight of Body.	Weight of Brain.	Proportion of Brain to Body.
Oxyechus vociferus	?	adult.	medium.	88.0 gr.	1.22 gr.	1 : 72

Laridae.

228,096 Larus argentatus.	?	adult.	medium.	748.0 gr.	7.35 gr.	1 : 102
224,984 " "	?	"	"	1145.0	7.02	1 : 163

LAMELLIROSTRES: *Phenicopteridae.*

228,064 Phenicopterius ruber	?	adult.	medium.	—	10.26 gr.	—
228,067 Phenicopterius ruber.	?	"	"	1579.5 gr.	10.55	1 : 150
Phenicopterius ruber	?	"	"	1638.0	10.8	1 : 152
228,058 Phenicopterius ruber	?	"	"	1720.0	11.65	1 : 147

Anatidae.

228,146 Cygnus gilbus	?	adult.	medium.	4989.6 gr.	16.4 gr.	1 : 304
Cygnus gilbus	?	"	somewhat emaciated.	4082.4	14.4	1 : 284
228,101 Cygnus olor	?	"	medium.	5528.25	14.5	1 : 381
224,925 Aix galericulata	?	?	"	299.0	4.22	1 : 71
225,000 Anas ?	?	adult.	"	—	4.09	—
224,999 Anas ?	?	"	"	—	4.19	—
228,130 Anas obscura	?	"	"	853.0	7.25	1 : 118
228,152 Nettion carolinensis	?	"	"	155.5	3.45	1 : 45
228,095 " "	?	"	"	187.5	3.15	1 : 60
228,094 " "	?	"	"	196.0	2.95	1 : 66
Nettion carolinensis	♀	"	"	252.6	3.25	1 : 78
" "	♂	"	"	271.7	3.05	1 : 89
224,949 'White Pekin' Duck	?	"	"	—	6.18	—

CRYPTURI: *Casuariidae.*

228,104 Casarius galeatus	?	adult.	medium.	—	31.7 gr.	—
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Dromidae.

282,077 Dromaius novae hollandiae	♀	adult.	medium.	—	20.3 gr.	—
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II. ARRANGEMENT BY AVERAGE OF RELATIVE BRAIN WEIGHT.
 MAMMALS.

Species.	Proportion of Brain to Body.		Species.	Proportion of Brain to Body.	
	Aver. 1 to ...	Indvs. 1 to ...		Aver. 1 to ...	Indvs. 1 to ...
Fancy mice,	22	a 22	Sciurus rufiventor	d 70	e 71
Blarina brevicauda,	23	a 23	Macacus fascicul,	67	a 64
Marmosets,	26	a 24		b 71	
		b 24	Mus rattus,	78	a 78
		c 26	Procyon cancriv,	78	a 78
		d 26	Myoprocta acouchy,	79	a 79
White mouse,	28	a 28	Dasyurus macul,	83	a 79
Cynopithecus niger,	31	a 31		b 87	
Sciuropterus volans,	32	a 29	Lemur macaco,	87	a 75
		b 29.5		b 99.5	
		c 30	Felis onca,	87	a 87
		d 30	Black and Tan Dog,	88.5	a 81
		e 31		b 96	
		f 33	Maltese cat,	89	a 89
		g 44	Dasyprocta aguti,	90	a 90
Geomys bursarius,	38	a 38	Nasua rufa,	93	a 93
Black and white fancy mouse	38	a 38	Cavia cutleri,	97	a 64
Sciurus hudsonicus,	39	a 34		b 73	
		b 37		c 73	
		c 37		d 79	
		d 39		e 94	
		e 42.5		f 103	
		f 43		g 111	
Mus musculus,	40	a 30		h 112	
		b 37		i 161	
		c 38	Lynx rufus,	98	a 98
		d 42	Canis mesomelas,	101	a 101
		e 46	Fox Terrier Dog,	109	a 100
		f 46		b 118	
Arvicola agrestis,	47	a 47	Putorius putor,	116	a 116
Cercopithecus callitr.,	50	a 50	Helarctos malay,	117	a 117
Potos caudivolvulus,	53	a 53	Irish Terrier Dog,	130	a 130
Phoca vitulina,	55	a 49	Wild Rabbit,	137	a 132
		b 51		b 143	
		c 57	Erinaceus europ.,	140	a 140
		d 57	Procyon lotor,	141	a 141
		e 61	Retriever Dog,	145	a 145
Mephitis mephitica,	58	a 58	Capreolus caprea,	150	a 149
Sciurus carolin,	62	a 52		b 151	
		b 53	Domestic Rabbit,	151	a 151
		c 53	Felis pardalis,	164	a 164
		d 57	Cervus dama,	166	a 166
		e 57	Trichosurus vulpec.,	172	a 172
		f 58	Tayarsu tajac.,	194	a 194
		g 61	Hystrix cristata,	197	a 197
		h 63	Mus norvegicus,	209	a 209
		i 64	Felis serval,	210	a 210
		j 65	Lynx canad.,	215	a 215
		k 65	Fiber zibeth.,	225	a 225
		l 67	Belgian Hare,	231.5	a 193
		m 68		b 201	
		n 72		c 202	
		o 75		d 205	
Sciurus rufiventor,	65	a 58		e 224	
		b 61		f 246	
		c 64		g 285	

II. ARRANGEMENT BY AVERAGE OF RELATIVE BRAIN WEIGHT.—

Continued.

MAMMALS.

Species.	Proportion of Brain to Body.		Species.	Proportion of Brain to Body.	
	Aver. 1 to ...	Indvs. 1 to ...		Aver. 1 to ...	Indvs. 1 to ...
Belgian Hare,		<i>h</i> 296	Onychogale frenata,	322	<i>a</i> 322
Canis nubil.,	251	<i>a</i> 251	Tatu novemcinctus,	328	<i>a</i> 328
Sheep, merino,	254	<i>a</i> 254	Trichosurus fuligin.,	342	<i>a</i> 342
Ursus torquatus,	260	<i>a</i> 260	Thylacinus cynoc.,	348	<i>a</i> 348
Antilocapra amer.,	265	<i>a</i> 265	Sheep, Shropshire,	352	<i>a</i> 352
Ovis tragelaphus,	271	<i>a</i> 271	Felis concolor,	353	<i>a</i> 353
Macropus,	276	<i>a</i> 276	Ursus horribilis,	382	<i>a</i> 382
Odocoileus truei,	288	<i>a</i> 274	Capromys pilor,	397	<i>a</i> 344
		<i>b</i> 302			<i>b</i> 450
Petrogale,	319	<i>a</i> 296	Melursus ursinus,	510	<i>a</i> 510
		<i>b</i> 342	Alces americ.,	669	<i>a</i> 669

BIRDS.

Sporæginthus amand.,	14.3	<i>a</i> 13	Paroraria, sp.?	25	<i>a</i> 24
		<i>b</i> 15			<i>b</i> 26
		<i>c</i> 15	Bull Finch,	26	<i>a</i> 26
Leiothrix lutea,	15	<i>a</i> 15	Munia oryzivora,	26.6	<i>a</i> 22
Erethacus rubec.,	15.5	<i>a</i> 15			<i>b</i> 25
		<i>b</i> 16			<i>c</i> 28
Sylvia atricapila,	17	<i>a</i> 17			<i>d</i> 29
Munia malacca,	19	<i>a</i> 19			<i>e</i> 29
Parus,	19	<i>a</i> 19	Falco sparverius,	27	<i>a</i> 27
Gold Finch,	21	<i>a</i> 19	Corvus monedula,	27	<i>a</i> 27
		<i>b</i> 21	Paroaria cucullata,	27.3	<i>a</i> 25
		<i>c</i> 21			<i>b</i> 25
		<i>d</i> 24			<i>c</i> 26
Junco hyemalis,	21	<i>a</i> 21			<i>d</i> 27
Passer domestic,	22	<i>a</i> 22			<i>e</i> 27
Xanthura luxuosa,	22	<i>a</i> 19			<i>f</i> 27
		<i>b</i> 25			<i>g</i> 29
Paroaria larvata,	22.7	<i>a</i> 21			<i>h</i> 32
		<i>b</i> 23	Callopsittacus n. holl.,	28	<i>a</i> 28
		<i>c</i> 24	Brotogeris jugul.,	29	<i>a</i> 29
Megascops asio,	23	<i>a</i> 23	Zonotrichia albicol.,	30	<i>a</i> 30
Carpodacus purpur.,	23	<i>a</i> 23	Cardinalis cardin.,	30	<i>a</i> 30
Melopsittacus undul.,	23.5	<i>a</i> 20	Cyanocitta cristata,	30	<i>a</i> 30
		<i>b</i> 27	Alauda arvensis,	31	<i>a</i> 31
Serinus,	23.9	<i>a</i> 20	Munia ("weaver-bird")	31	<i>a</i> 28
		<i>b</i> 21			<i>b</i> 34
		<i>c</i> 22	Mimus polyglottus,	32.3	<i>a</i> 25
		<i>d</i> 23			<i>b</i> 35
		<i>e</i> 23			<i>c</i> 37
		<i>f</i> 23	Psittacus erithacus,	36.5	<i>a</i> 35
		<i>g</i> 24			<i>b</i> 38
		<i>h</i> 24	Agelaius phœnicus,	37	<i>a</i> 37
		<i>i</i> 25	Amazona panamensis,	37.8	<i>a</i> 35
		<i>j</i> 25			<i>b</i> 35
		<i>k</i> 25			<i>c</i> 36
		<i>l</i> 26			<i>d</i> 39
		<i>m</i> 27			<i>e</i> 44
		<i>n</i> 27	Amazona leucocephala,	38.2	<i>a</i> 31
Acanthis cannabina,	24	<i>a</i> 24			<i>b</i> 37
Melospiza cinerea melod.,	24	<i>a</i> 24			<i>c</i> 39
Rail,	25	<i>a</i> 25			<i>d</i> 41

II. ARRANGEMENT BY AVERAGE OF RELATIVE BRAIN WEIGHT.—

Continued.

BIRDS.

Species.	Proportion of Brain to Body.		Species.	Proportion of Brain to Body.	
	Aver. 1 to ...	Indvs. 1 to ...		Aver. 1 to ...	Indvs. 1 to ...
Amazona leucocephala,		<i>e</i> 43	Colinus virginianus,	<i>f</i> 93	
Corvus brachyrhynch,	45.7	<i>a</i> 39		<i>g</i> 95	
		<i>b</i> 41		<i>h</i> 105	
		<i>c</i> 44		<i>i</i> 106	
		<i>d</i> 47		<i>j</i> 110	
		<i>e</i> 49		<i>k</i> 110	
		<i>f</i> 54		<i>l</i> 112	
Dacelo gigas,	47	<i>a</i> 47		<i>m</i> 112	
Cacatua moluccensis,	48	<i>a</i> 48		<i>n</i> 113	
Columbig allina,	49.5	<i>a</i> 48		<i>o</i> 116	
		<i>b</i> 51		<i>p</i> 120	
Sirnum varium,	51	<i>a</i> 46		<i>q</i> 138	
		<i>b</i> 56		<i>r</i> 165	
American Robin,	53	<i>a</i> 53	Domestic pigeon,	108.5	<i>a</i> 99
Merula merula,	55	<i>a</i> 55		<i>b</i> 118	
Strix pratincola,	56	<i>a</i> 52	Borasa umbellus,	111	<i>a</i> 111
		<i>b</i> 60	Homer pigeon,	116	<i>a</i> 116
Sturnella magna,	59	<i>a</i> 59	Anas obscura,	118	<i>a</i> 118
Nycticorax naevius,	60	<i>a</i> 60	Lophortyx californicus,	124	<i>a</i> 124
Plegadis guarama,	65	<i>a</i> 65	Corvus brachyrhynchus,	130	<i>a</i> 130
Turtledove, common,	67.5	<i>a</i> 67	(Domesticated)	<i>b</i> 130	
		<i>b</i> 68	Larus argentatus,	132.5	<i>a</i> 102
Nyctea nyctea,	68	<i>a</i> 68		<i>b</i> 163	
Aix galericulata,	71	<i>a</i> 71	"Pigmy Pouter" pigeon,	133.3	<i>a</i> 116
Oxyechus vociferus,	72	<i>a</i> 72		<i>b</i> 121	
Nettion carolin.	74.25	<i>a</i> 60		<i>c</i> 163	
		<i>b</i> 66	Tantalus loculator,	138	<i>a</i> 138
		<i>c</i> 78	Phœnicopterus ruber,	149.7	<i>a</i> 147
		<i>d</i> 89		<i>b</i> 150	
Florida cærulea,	77	<i>a</i> 48		<i>c</i> 152	
		<i>b</i> 106	Numidia cristata,	155	<i>a</i> 155
Bubo virginianus,	77.5	<i>a</i> 70	Anhinga anhinga,	166.7	<i>a</i> 132
		<i>b</i> 85		<i>b</i> 134	
Botaurus lentiginosus,	85.5	<i>a</i> 73		<i>c</i> 234	
		<i>b</i> 98	Cathartes aura,	205	<i>a</i> 205
Ocyphaps lophotes,	86	<i>a</i> 86	Golden Seabright Chicken,	205.5	<i>a</i> 118
Ice pigeon	88	<i>a</i> 87		<i>b</i> 293	
		<i>b</i> 89	Ardea herodias,	208.5	<i>a</i> 201
Buteo lineatus,	90	<i>a</i> 90		<i>b</i> 216	
Ardea tricolor ruficollis,	94	<i>a</i> 94	Aquila chrysetos,	202	<i>a</i> 292
Turtur risorius,	104	<i>a</i> 104	Cygnus gilbus,	304	<i>a</i> 304
Colinus virginianus,	106.1	<i>a</i> 79	Cygnus olor,	331	<i>a</i> 381
		<i>b</i> 80	Chicken,	457	<i>a</i> 325
		<i>c</i> 81		<i>b</i> 437	
		<i>d</i> 84		<i>c</i> 609	
		<i>e</i> 91	Pavo cristatus,	457	<i>a</i> 457

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