

# **Ostrich Muscle Identification And Suggested Carcass, Muscle and Parts Numbers**

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**“Working Copy”**

## Introduction

The Ostrich Muscle Identification and Suggested Carcass, Muscle and Parts Numbers Booklet is designed to be a working copy for committee members working on ostrich muscle identification.

To aid in the identification process, a list of 22 Latin named muscles are listed and line drawings are given showing the approximate location on the carcass. (see pages 3-8)

Many of the Latin names for the muscles are credited to Dr. F.D. Mellett, formerly of the Department of Animal Science, University of Stellenbosch, Stellenbosch 7600, South Africa (See page 9 for table 2), a table from his publication "A note on the Musculature of the Proximal Part of the Pelvic Limb of the Ostrich (Struthio Camelus) .0038-2809 Fl S. Afr. Vet. Ans. (1994) 65 (1):5-9.

A brief summary of the work done on the International Ostrich Meat Buyers Guide is given on page 10. Trade names as well as Latin names, catalogue numbers for ostrich parts and muscle for the First and Second Editions of the International Ostrich Meat Buyers Catalogue are given on pages 11 thru 14.

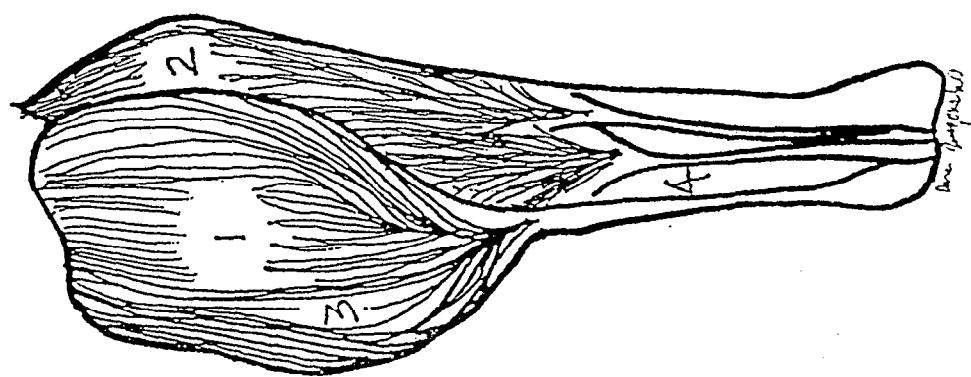
Our suggested names and numbers for the different parts of the carcass, the trimmings and edible parts are given on page 15. Comments relating to these names and numbers are given as page 16.

Our suggested classification of the individual muscles is given on page 17 and our comments relating to this information on pages 18 and 19. And finally, a table, which might be helpful, listing the relative size or weight for each muscle is given (page 20).

Good Luck!

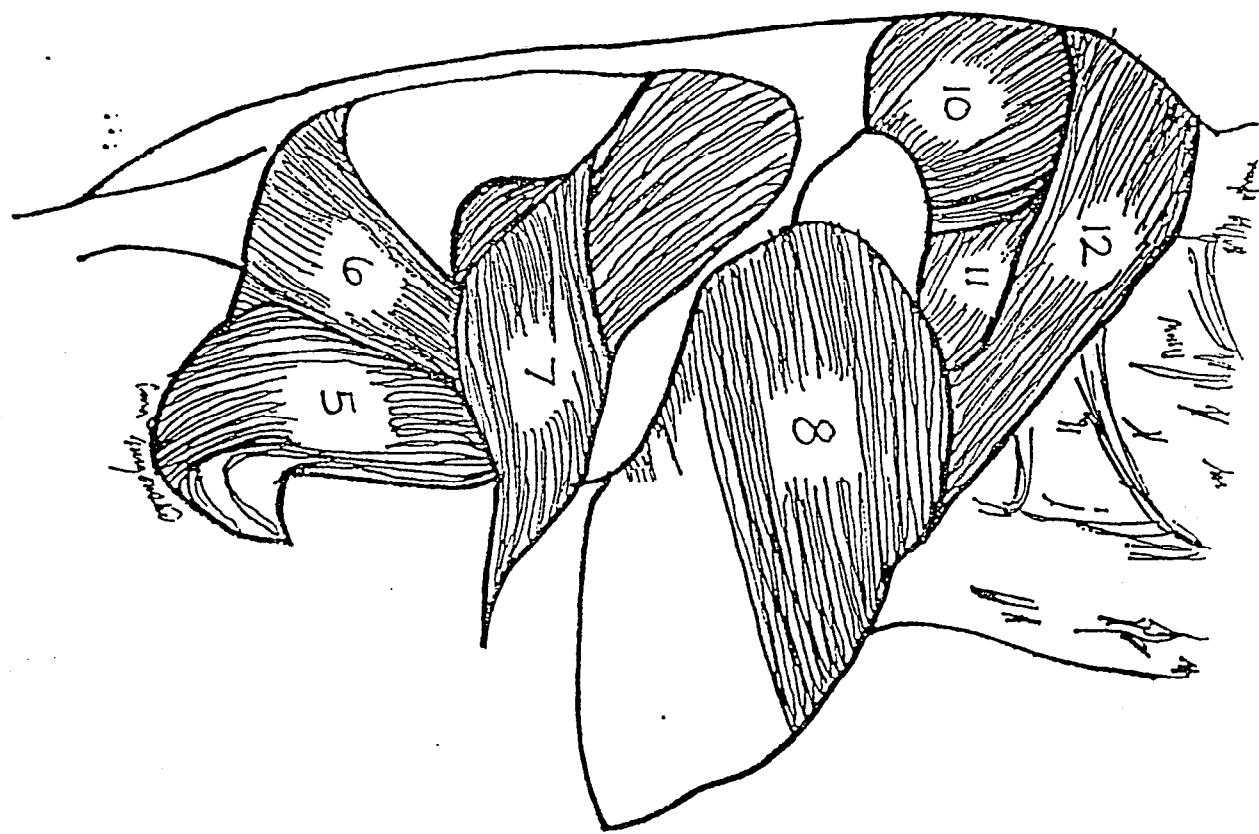
Names of muscles sketched in drawings showing locations.

<u>Number</u>	<u>Latin Name</u>
1.	<i>M. gastrocnemius pars externa</i>
2.	<i>M. fibularis longus</i>
3.	<i>M. gastrocnemius pars interna</i>
4.	Flexor and extensor muscles
5.	<i>M. obturatorius medialis</i>
6.	<i>M. flexor cruris lateralis</i>
7.	<i>M. iliofibularis</i>
8.	<i>M. femorotibialis medius</i>
9.	<i>M. iliotibialis lateralis</i>
10.	<i>M. iliofemoralis externus</i>
11.	<i>M. ambiens</i>
12.	<i>M. iliotibialis cranialis</i>
13.	<i>M. iliofemoralis</i>
14.	<i>M. pubo-ischio-femoralis</i>
15.	<i>M. ischiofemoralis</i>
16.	<i>M. femorotibialis externus</i>
17.	<i>M. femorotibialis accessorius</i>
18.	<i>M. iliotrochantericus cranialis</i>
19.	<i>M. iliofemoralis internus</i>
20.	<i>M. iliotrochantericus caudalis</i>
21.	<i>M. flexor cruris medialis</i>
22.	<i>M. pectineus</i>
23.	<i>M. femorotibialis internus</i>

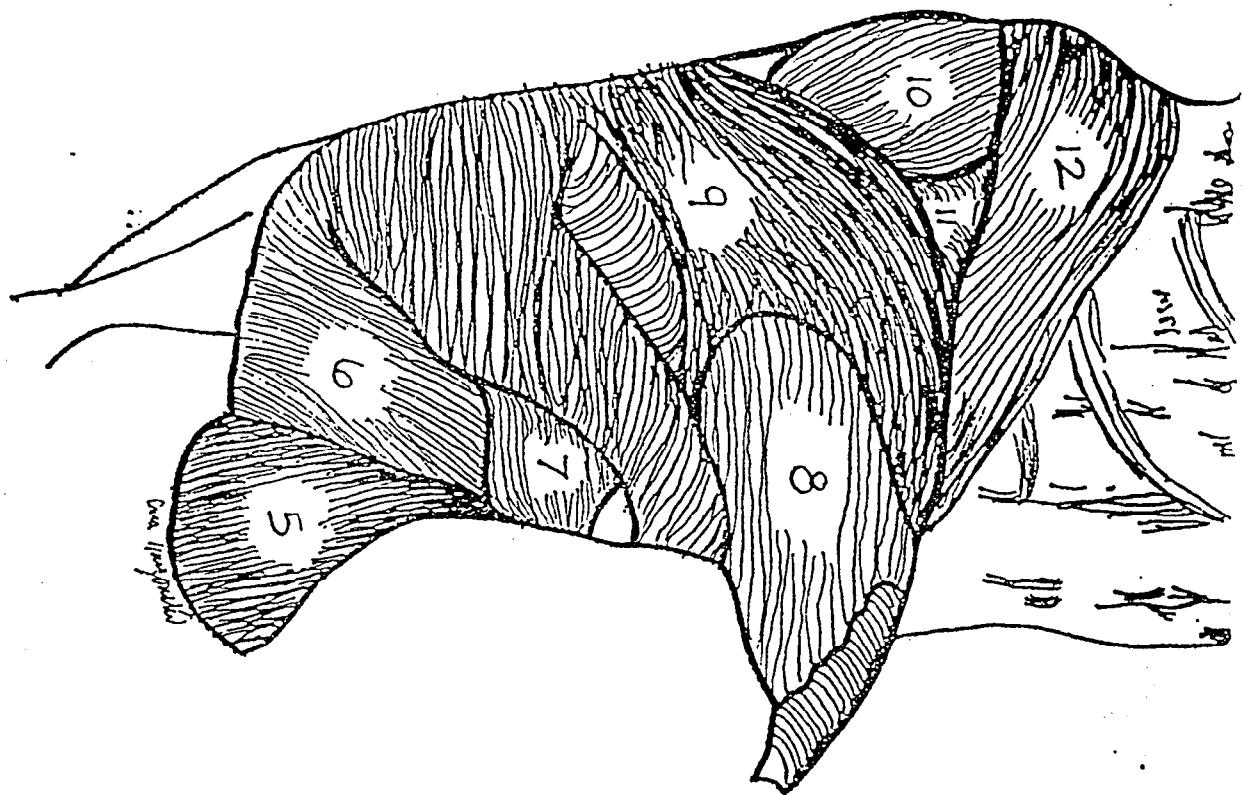


1. *M. gastrocnemius pars externa*
2. *M. fibularis longus*
3. *M. gastrocnemius pars interna*
4. Flexor and extensor muscles

5. *M. obturatorius medialis*
6. *M. flexor cruris lateralis*
7. *M. iliofibularis*
8. *M. femorotibialis medius*



10. *M. iliofemoralis externus*
11. *M. ambiens*
12. *M. iliobibialis cranialis*

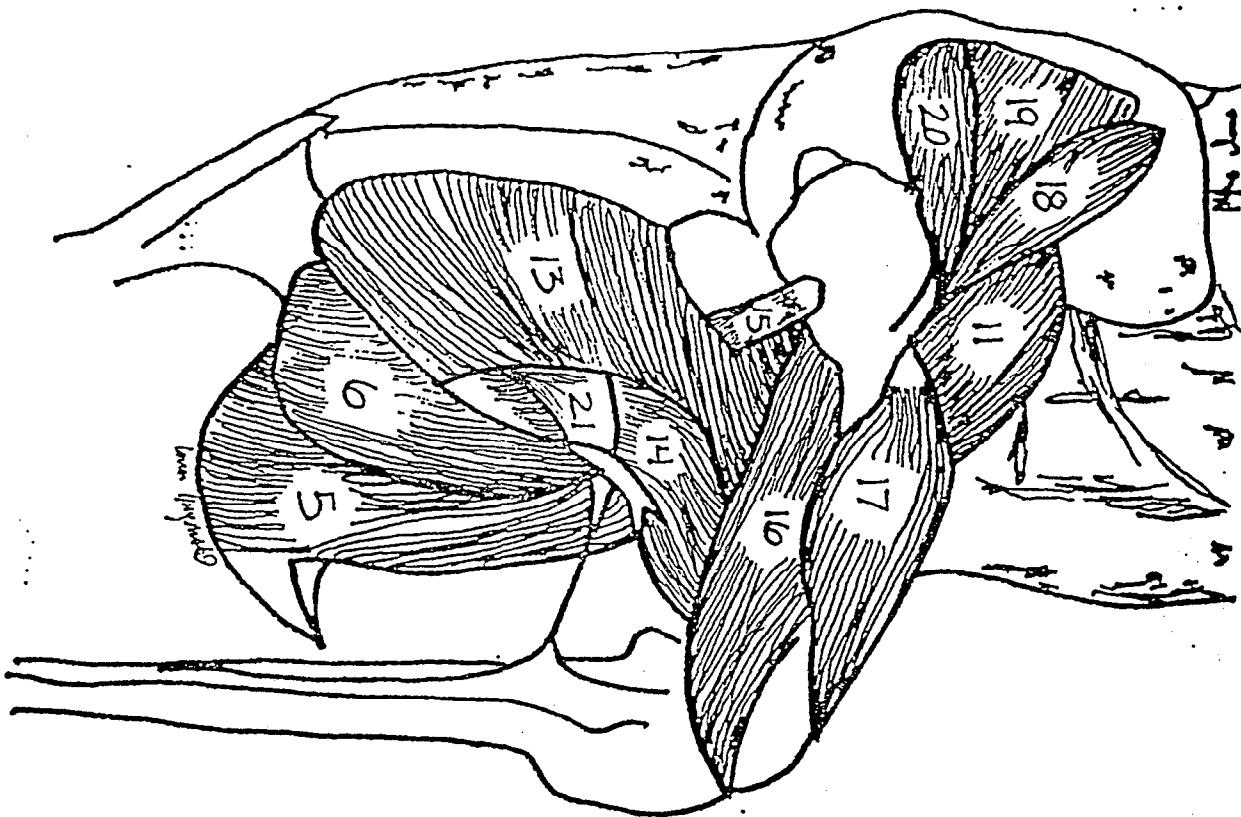


5. *M. obturatorius medialis*
6. *M. flexor cruris lateralis*
7. *M. iliofibularis*
8. *M. femorotibialis medius*
9. *M. iliobibialis lateralis*
10. *M. iliofemoralis externus*
11. *M. obliquus*
12. *M. iliobibialis cranialis*

5. *M. obturatorius medialis*

6. *M. flexor cruris lateralis*

11. *M. ambiens*



13. *M. iliofemoralis*

14. *M. pubo-ischio-femoralis*

15. *M. ischiofemoralis*

16. *M. femorotibialis externus*

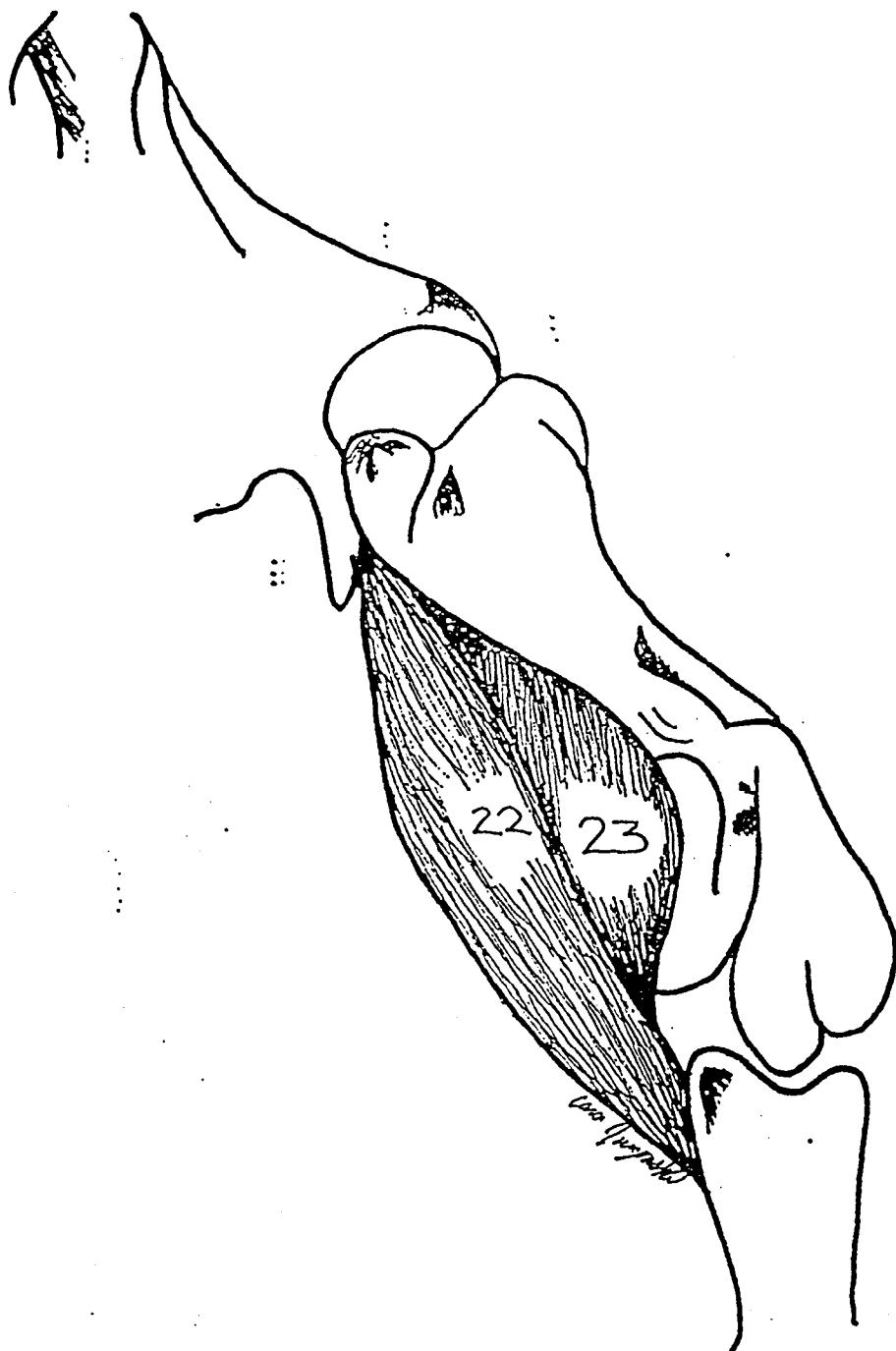
17. *M. femorotibialis accessorius*

18. *M. iliotrochantericus cranialis*

19. *M. iliofemoralis internus*

20. *M. iliotrochantericus caudalis*

21. *M. flexor cruris medialis*



22. *M. pectineus*

23. *M. femorotibialis internus*

Table 2: Individual muscle mass (sum of left and right hand side, kg) of the hindquarters and certain hip and thigh muscles of adult ostriches

Body part or muscle	Least square mass (kg)	Haughton & Norman <sup>a</sup> (kg)
Hindquarters (total)	39,800( $\pm$ 1,160)	-
Pre-acetabular muscles		
1. <i>M. iliobibialis cranialis</i>	1,530( $\pm$ 0,0632)	1,021
2. <i>M. ambiens</i>	0,540( $\pm$ 0,0185)	0,411
3. <i>M. pectineus</i>	0,308( $\pm$ 0,019)	0,227
Acetabular muscles		
4. <i>M. iliofemoralis externus</i>	1,150( $\pm$ 0,0506)	0,751
5. <i>M. iliofemoralis internus</i>	0,128( $\pm$ 0,00510)	0,099
6. <i>M. iliocrochantericus caudalis</i>	0,092( $\pm$ 0,00524)	0,057
7. <i>M. iliocrochantericus cranialis</i>	0,148( $\pm$ 0,00677)	0,099
Post-acetabular muscles		
8. <i>M. iliobibialis lateralis</i>	3,280( $\pm$ 0,410)	2,651
9. <i>M. iliofibularis</i>	3,400( $\pm$ 0,136)	2,339
10. <i>M. iliobibialis</i>	1,160( $\pm$ 0,0491)	0,964
11. <i>M. flexor cruris lateralis</i>	1,170( $\pm$ 0,0441)	0,794
12. <i>M. flexor cruris medialis</i>	0,375( $\pm$ 0,0106)	0,255
13. <i>M. pubo-ischio-femoralis</i>	0,387( $\pm$ 0,0131)	0,156
14. <i>M. ischiofemoralis</i>	0,131( $\pm$ 0,00518)	0,269
15. <i>M. obturatorius medialis</i>	1,710( $\pm$ 0,0863)	0,992
16. <i>M. obturatorius lateralis</i>	*      *	0,014
Femoral muscles		
17. <i>M. femorotibialis medius</i>	1,660( $\pm$ 0,0605)	1,446
18. <i>M. femorotibialis accessorius</i>	1,280( $\pm$ 0,0351)	1,177
19. <i>M. femorotibialis externus</i>	0,368( $\pm$ 0,0103)	0,284
20. <i>M. femorotibialis internus</i>	0,300( $\pm$ 0,00980)	0,213

\* Not included in present study

To: International Ostrich Meat Buyers Catalogue Committee and Others  
From: Chef Hubert Schmieder, Dr. William J. Stadelman and Dr. Richard L. Adams

The "International" Ostrich Meat Buyers Catalogue was first issued in early 1997. It, along with the 2<sup>nd</sup> Edition, was compiled and published by Animal Technologies cc of South Africa. Work on the First Edition was spearheaded by Dr. Francois D. Mellett, Mr. Peter Fisher and the ad hoc committee of the first International Ostrich Meat Congress. Muscle identification numbers and the groupings were revised and the Second Edition published in late 1997. Work on this Edition was done mostly by Mr. Peter Fisher and Mr. John Westcott of South Africa. This Edition was presented to the attendees of the International Ostrich Meat Congress in Belgium and was accepted by the group.

However, since that meeting, several individuals have expressed reservations about the numbering of the muscles and expressed a desire to have revisions made. For example, the use of different letters after the same number for different muscles is a problem for those countries that do not use the English alphabet.

The International Committee will meet again September 21-25, 1998 in Audtshoorn, South Africa to make possible revisions in the identification and numbering of the ostrich muscles. To have a truly "International" Catalogue, it would be desirable to have input from as many individual countries as possible.

Therefore, everyone wishing to contribute to the naming and numbering of the ostrich muscles, ostrich parts, etc. is encouraged to submit their suggestions, either in person or in writing. To be most helpful the suggestion(s) should be accompanied by a reason(s) for the change(s).

The changes we are suggesting are based on the First Edition of the International Ostrich Meat Buyers Catalogue rather than the Second Edition as we felt the First Edition was nearer to what the Final Edition should be. Others submitting suggestions may use the format we submitted as a basis, or may use either the First or Second Edition.

*First Edition*  
INTERNATIONAL OSTRICH MEAT BUYER'S CATALOGUE

Cat. no.	Trade name	Category	Region
OS1000	Carcass(incl. neck)		
OS1001	Neck		
OS1002	Half carcass		
OS1003	Leg bone-in		
OS1004	Thigh bone-in		
OS1005	Drum bone-in		
OS1006	Leg boneless		
OS1007	Thigh boneless		
OS1008	Drum boneless		
	Latin name		Drum
OS1011	<i>M. gastrocnemius pars interna</i>	S	
OS1012	<i>M. gastrocnemius pars media</i>	F	
OS1013	<i>M. gastrocnemius pars externus</i>	S	
OS1014	<i>M. fibularis longus</i>	S	
OS1015	-----	DS	
			Thigh
OS1021	<i>M. iliofemoralis ext. et int.<sup>3</sup></i>	F	
OS1022	<i>M. ilirotrochantericus cranialis</i>	SC	Rump
OS1023	<i>M. iliofemoralis internus</i>	SC	
OS1024	<i>M. ilirotrochantericus caudalis</i>	SC	
			Thigh
OS1031	<i>M. iliotibialis lateralis</i>	S	Silverside
OS1032	<i>M. iliofibularis</i>	F	
			Thigh
OS1041	<i>M. femorotibialis medius</i>	S	
OS1042	<i>M. femorotibialis externus</i>	S	
OS1043	<i>M. femorotibialis internus</i>	S	
OS1044	<i>M. femorotibialis accessorius</i>	S	Thickflank
OS1045	<i>M. pectineus</i>	S	
OS1046	<i>M. ambiens</i>	F	
OS1047	<i>M. iliotibialis cranialis</i>	F	
			Thigh
OS1051	<i>M. iliofemoralis</i>	F	
OS1052	<i>M. flexor cruris lateralis</i>	F	
OS1053	<i>M. flexor cruris medialis</i>	S	
OS1054	<i>M. pubo-ischio-femoralis</i>	SC	Topside
OS1055S	<i>M. obturatorius</i>	S	
OS1055F	<i>M. obturatorius</i>	F	
OS1056	<i>M. ischiofemoralis</i>	SC	

<sup>1</sup>Catalogue number

<sup>2</sup>F=Filet, S=Steak, SC=Small cuts, DS=Drum straps

<sup>3</sup>Currently *externus et internus* - to be renamed *internus et ext...*

**TRIMMINGS AND EDIBLE OFFAL**

<sup>1</sup> Cat. no.	Trade name	<sup>2</sup> Category
OS1061	Lean meat trimmings	
OS1062	Back muscles	
OS1063	Wing muscles	
OS1064	Heart	
OS1065	Liver	
OS1066	Gizzard	
OS1071	Internal fat	
OS1072	External fat	

<sup>1</sup>Catalogue number

<sup>2</sup>F=Filet, S=Steak, SC=Small cuts, DS=Drum straps

## INTERNATIONAL OSTRICH MEAT BUYER'S CATALOGUE

<sup>1</sup> Cat. no.	Trade name	<sup>2</sup> Category	Region
OS1001	Carcass		
OS1002	Half carcass		
OS1004	Leg boneless		
OS1005	Leg bone-in		
OS1009	Drum boneless		
OS1010	Drum bone-in		
OS1029	Thigh boneless		
OS1030	Thigh bone-in		
Latin name		Drum	
OS1011	<i>M. gastrocnemius pars interna</i>	S	
OS1012	<i>M. gastrocnemius pars externa</i>	S	
OS1013	<i>M. fibularis longus</i>	S	
OS1014	<i>M. gastrocnemius pars media</i>	F	
OS1015	-----	DS	
Latin name		Thigh	
OS1035	<i>M. iliotibialis lateralis</i>	S	
OS1036	<i>M. flexor cruris lateralis</i>	F	
OS1037	<i>M. flexor cruris medialis</i>	S	
OS1038	<i>M. pubo-ischio-femoralis</i>	SC	
OS1041	<i>M. femorotibialis medius</i>	S	
OS1042	<i>M. femorotibialis externus</i>	S	
OS1043	<i>M. femorotibialis internus</i>	S	
OS1045	<i>M. iliofemoralis ext. et int.<sup>3</sup></i>	F	
OS1046	<i>M. iliofibularis</i>	F	
OS1047	<i>M. iliotibialis cranialis</i>	F	
OS1050	<i>M. iliofemoralis</i>	F	
OS1059A	<i>M. femorotibialis accessorius</i>	SC	
OS1059B	<i>M. pectineus</i>	SC	
OS1059C	<i>M. ambiens</i>	F	
OS1060S	<i>M. obturatorius</i>	S	
OS1060F	<i>M. obturatorius</i>	F	
OS1073A	<i>M. ischiofemoralis</i>	SC	
OS1073B	<i>M. iliotochantericus cranialis</i>	SC	
OS1073C	<i>M. iliofemoralis internus</i>	SC	
OS1073D	<i>M. iliotochantericus caudalis</i>	SC	

<sup>1</sup>Catalogue number<sup>2</sup>F=Filet, S=Steak, SC=Small cuts, DS=Drum straps<sup>3</sup>Currently *externus et internus* - to be renamed *internus only*

## TRIMMINGS AND EDIBLE OFFAL

<sup>1</sup> Cat. no.	Trade name	<sup>2</sup> Category
OS1071	Internal fat	
OS1072	External fat	
OS1073	Lean meat trimmings	
OS1081	Wing muscles	
OS1082	Neck	
OS1083	Back muscles	
OS1084	Heart	
OS1085	Liver	
OS1086	Gizzard	

<sup>1</sup>Catalogue number

<sup>2</sup>F=Filet, S=Steak, SC=Small cuts, DS=Drum straps

## **International Ostrich Meat Buyers Catalogue**

Cat. No.	Trade Name
1001	Carcass (Inc. neck and breast)
1002	Split Carcass-no neck (inc. breast)
1003	Leg Bone in
1004	Leg Boneless
1005	Drum Bone in
1006	Drum Boneless
1007	Thigh Bone in
1008	Thigh Boneless

### **Individual Muscles – see attached sheets**

### **Trimmings and Edible Parts**

1061	Lean meat trimmings
1062	Back muscles
1063	Drum straps
1064	Wings
1065	Neck
1066	Breast
1067	Heart
1068	Liver
1069	Gizzard (trimmed)
1070	Kidneys
1071	Testicles
1072	Brain
1073	Intestines (cleaned)
1081	Internal Fat
1082	External Fat

To: International Ostrich Meat Buyers Catalogue Committee and Others  
From: Chef Hubert Schmieder, Dr. William Stadelman, Dr. Richard Adams-Purdue University

The International Ostrich Meat Buyers Catalogue is designed to assist the buyers and sellers of ostrich meat, between countries as well as within a country. Therefore, some aspects of the guide, especially in the edible parts section, will not be useful within certain countries but would be between countries.

Suggest changes and reasons for the changes, relating to trade names, trimmings and edible parts are as follows:

The OS is omitted before the 1000 numbers because some countries do not use the English alphabet.

The 1000 series is used but the first part (the carcass, Inc. neck and breast) is listed as 1000. It is better to have the first item start with 1 rather than with 0.

Neck and breast, once removed from the carcass are moved to the edible parts section.

The term split carcass with no neck but including breast is the same as half carcass but more descriptive.

Leg, drum and thigh are listed in this order, with the bone-in portion listed first. This is the order in which the parts of the carcass are normally processed.

The trimmings and edible parts are listed in no particular order. Parts that are used in some countries, but not others, are included. Other parts that we did not consider might be added.

Suggested classification of individual muscles as observed from the outside of the carcass

<u>Cat. No.</u>	<u>Latin Names</u>	<u>Region</u>	
1011	M. gastrocnemius pars externa	Drum	
1012	M. gastrocnemius pars media		(For reference purposes only)
1013	M. gastrocnemius pars interna		
1014	M. fibularis longus		Table 2, Mellett
1021	M. iliofemoralis externus	Thigh	4
1022	M. iliotrochantericus cranialis		7
1023	M. iliofemoralis internus		5
1024	M. iliotrochantericus caudalis		6
1031	M. iliotibialis lateralis		8
1032	M. iliofibularis		9
1041	M. femorotibialis externus		19
1042	M. femorotibialis medius		17
1043	M. femorotibialis internus		20
1044	M. femorotibialis accessorius		18
1045	M. pectineus		3
1046	M. ambiens		2
1047	M. iliotibialis cranialis		1
1051	M. flexor cruris lateralis		11
1052	M. flexor cruris medialis		12
1053	M. pubo-ischiofemoralis		13
*1054	M. obturatorius "externus"		15
*1055	M. obturatorius "internus"		
1056	M. iliofemoralis		10
1057	M. ischiofemoralis		14

\* 1054 and 1055 are one muscle. Most of the muscle lies on the external part of the carcass (the "external" part). A small portion extends thru an opening and onto the body cavity (the "internal" part). The "internal" portion is significantly more tender than the "external" portion, thus the reason for the separation.

## Individuals Muscles

**Suggested Changes and Reasons for the changes**  
**Submitted by Chef Hubert Schmieder, Dr. William Stadelman and**  
**Dr. Richard Adams**

The muscles of the carcass, as presented on page 17, are viewed with the Leg-bone in, laying on the table, with the inside portion of the carcass resting on the table.

1011 is the M gastrocnemius pars externa. This is the first muscle observed.

1012 is the M gastrocnemius pars media

1013 is the M gastrocnemius pars interna

1014 is The M fibularis longus

The drum strap is moved to the trimmings and edible parts as it fits better there.

The thigh muscles are listed next. The four categories are retained as there are four sections to the thigh, (Rump, Silverside, Thickflank and Topside). These names are omitted as they are not common to all countries. No better names could be found, thus no names were listed. However, the four sections given here are different from the four sections as listed by Mellett (table2).

1021 is, the M iliofemoralis externus. The First Edition of the I.O. Meat Buyers Guide lists this as both ext. and int. and then states in a subscript that this will be renamed internus only. However, OS1023 is listed as M iliofemoralis internus. This is confusing, OS1051 is also listed as M iliofemoralis. This problem needs to be addressed and each muscle should have a separate and different name.

The column “Table 2, Mellett” is for reference only and is not to be considered a part of the suggested list.

1041 and 1042 have been reversed so as to list the externus before the medius.

1041 and 1042 have been reversed so as to list the externus before the medius.

The order in which the muscles are listed from 1051 thru 1056 have been changed slightly. OS1055S and OS1055F are listed as 1054 and 1055, M obturatorus “externus” and M obturatorus “internus”, respectively. An explanation for this is given at the bottom of the table.

We did not address “Category” section. While it is very important, we did not feel that it was related to the numbering of the muscles.

Yields of various muscles of the ostrich, 220 lb. or 100 kilo live weight

*Number	Latin name	Percent	Pounds/leg	Grams/leg
1.	M. gastrocnemius externa	7.20	2.38	1082
2.	M. fibularis longus	5.50	1.72	782
3.	M. gastrocnemius interna	9.10	3.00	1364
4.	Flexor and extensor group	11.00	3.63	1650
5.	M. oburatoris medialis	5.70	1.88	855
6.	M. flexor cruris lateralis	3.90	1.29	586
7.	M. iliofibularis	11.33	3.74	1700
8.	M. femorotibialis medius	5.53	1.82	827
9.	M. iliotibialis lateralis	10.93	3.61	1641
10.	M. iliofemoralis externus	3.83	1.26	573
11.	M. ambiens	1.80	0.60	273
12.	M. iliotibialis cranialis	5.02	1.66	755
13.	M. iliofemoralis	3.87	1.28	582
14.	M. pubo-ischiofemoralis	1.29	0.43	195
15.	M. ischiofemoralis	0.44	0.15	68
16.	M. femorotibialis externus	1.23	0.41	186
17.	M. femorotibialis accessorius	4.27	1.41	641
18.	M. iliotrochantericus cranialis	0.49	0.16	73
19.	M. iliofemoralis internus	0.43	0.14	64
20.	M. iliotrochantericus caudalis	0.31	0.10	45
21.	M. flexor cruris medialis	1.25	0.42	191
22.	M. pectineus	1.03	0.34	155
23.	M. femorotibialis internus	0.43	0.14	64
	Trimmings	<u>4.12</u>	<u>1.36</u>	<u>618</u>
		100.00	32.93	15 kilo

The percentages and weights of the various muscles will vary slightly among birds, especially among birds of varying ages. The weights shown are for a 220 pound or 100 kilo live weight bird. For heavier or lighter birds the percentages can be used to estimate the yields of various cuts. Any muscle weighing 0.40 pounds (about 6 ½ ounces) or 182 grams will make a suitable cut for intact muscle usage. Flexor and extensor muscles of the drum (No. 4) and smaller muscles of the thigh along with trimmings can be utilized in cured meat products, usually to greater advantage than as ground meat.

\*The numbers correspond to those given on page 3.