129. *Preliminary Note on the Occurrence of a Finger Claw in Domestic Fowls.*

By Tôsaku KAGEYAMA.

Faculty of Agriculture, Tokyo Imperial University.

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WIEDERSHEIM¹⁾ says that the presence of finger-claw in the existing birds are found only exceptionally, and when they are found, it occurs mostly on thumb. A similar statement is also seen in CARL R. HENNICKE'S Essay²⁾ on birds in the Handwörterbuch der Naturwissenschaften, 1915. Owing to studies on the bastard-formation among domestic fowls which was carried out under the direction of Professor Chiyo-matsu ISHIKAWA while I was in the College of Agriculture, Tokyo Imperial University, I had an occasion to observe a claw like body on the tip of the thumb in one of the bastard between a leghorn and a Japanese variety with a prolonged scream (Naganaki-dori=long-cry-fowl).

The object in question was immediately shown to Professor ISHIKAWA who at once recognized it to be distinctly a claw, and has suggested me to work it out thoroughly. The chicken was about six months old, and the claw appears as a yellowish body placed at the end of the thumb, and is slightly curved ventrally. In order to verify it, however, histologically, Prof. ISHIKAWA has advised me to make a series of sections of the same. And to my great pleasure the structure of it shows that the body is beyond any doubt a claw.

One of these sections is shown in Fig. 1. which did not pass exactly through the median line of the finger, but slightly oblique to it. A glance at the figure will show, however, that it is in reality a claw

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1) R. Weidersheim :—

Vergleichende Anatomie der Wirbeltiere, Siebente Auflage, 1909. p. 222.

“Finger krallen, welche noch an allen drei Endphalangen der Archaeopteryx sassen, finden sich bei Vögeln nur noch ausnahmsweise, und zwar meist am Zeigefinger oder auch noch am dritten (Vierten) Finger (Struthionen, Chionis, Megapodius und verschiedener rezenten Vögel [Vergl. Sterna, Fig. 164]).”

2) Carl R. Hennicke :—

Vögel, Handwörterbuch der Naturwissenschaften Bd. X p. 291.

“Finger Krallen kommen bei den rezenten Vögeln nur noch ausnahmsweise vor, meist am Daumen, seltener am Zeige-Finger oder dritten Finger (Struthionen, Chionis, Megapodius).”

resting upon the end of the second phalangeal bone and enclosing it basally.

This find has led me to look after the structure in other fowls, which has shown me that the occurrence of a claw on the thumb is not rare but is rather common among them, and even among those that are not bastards, or at any rate in the races which are supposed to be pure genetically. In this preliminary note I will only give a few photographs of the fowls in which the claw is distinctly seen. Thus Fig. 2 represents one of a white leghorn, an adult male, in which the claw appears as a blackish body at the end of the left thumb, while in Fig. 3, is shown the claw of a Japanese variety of the Rumpless Fowls (Japanese name: Uzura-o, or quail-tailed fowl). In this specimen, the claw is not colored, so that it does not stand out so clearly in the picture as in that of Fig. 2.

Further examinations of the fowls, of the pure breed as well as of the bastards, have revealed me the presence of a claw on the thumb in many fowls as shown in the table I:—

Breeds	Sex.	L.R. P.	L.R. P.B.	L.R. B.P.	L.R. P.O.	L.R. O.P.	L.R. A.P.	L.R. P.A.	L.R. A.	Sum.
Naganaki	♀	2							1	3
	♂	4							1	5
„ Chicken	♀	2								2
	♂	1								1
Kukin	♂	2								2
	♀	4						1		5
Rumpless	♂	2							1	3
„ Chicken	♀	2								2
	♂	1								1
Tosa Fowl	♂	1								1
Black Bantam	♂	1								1
	♀	1					1			2
White Bantam	♀	1							1	1
Katura Bantam	♀	2						1		3
	♂	2								2
	♀	1								1
Nagoya Cochin	♀	13				1				14
	♂	3								3
White Leghorn	♀	13								13
„ Chicken	♂	1								1
	♀	1								1
Sebright Bantam	♀	1								1
Barred Plymouth Rock	♀	2		1			2			5
	♂	1								1
	♀	3								3
White Wyandotte	♂	1								1

In this table L=Left ; R=Right ; P=Present ; B=Broken ; O=Absent ; A=Anlage

Breeds	Sex.	L.R. P.	L.R. P.B.	L.R. B.P.	L.R. P.O.	L.R. O.P.	L.R. A.P.	L.R. P.A.	L.R. A.	Sum.
Brown Leghorn	♀	4					2			6
	♂	1								1
„ Chicken	♀	3								3
	♂	1								1
Partridge-Plymouth Rock	♀	2					2			4
	♂	1								1
Black Minorca	♀	5		1			1			7
	♂	1								1
„ Chicken	♂	1								1
	♀	2							1	3
Nagoya	♂	1								1
„ Chicken	♀	7								7
	♂	4								4
Black Orpington	♀	4						1		5
	♂	1								1
Rhode Island Red	♀	2					1			3
	♂	1								1
„ Chicken	♀	4								4
		111		2		1	9	3	5	131

Thus out of 131 individuals examined, 111 have shown the presence of a claw on both the right and the left thumbs, 12 on the right thumb, 3 on the left, while 5 have shown only the Anlage on both the thumbs. Of the 12 on the right 9 will be seen with the Anlage on the left, 2 with the left thumb broken, so that it is not certain whether the nail was present or not, while 1 without a nail on the left. Of the 3 in which a nail was present on left, the right thumbs show also an Anlage of it.

Moreover some of the domestic ducks were also examined on this point, the result is shown in the following table :—

	Sex.	L.R. P.	L.R. P.B.	L.R. B.P.	L.R. P.O.	L.R. O.P.	L.R. A.P.	L.R. P.A.	L.R. A.	Sum.
Formosan Domestic Duck	♀	1								1
	♂		1							1
Wild Duck (<i>Anas boschas.</i>)	♀	3								3
	♂							1		1
Japanese Domestic Duck	♀	2								2
	♂	1								1
White Pecking-Duck	♀	2								2
	♂	1								1
Goose (<i>Anser Cygnoides.</i>)	♀	1								1
	♂	1								1
		12	1					1		14

Thus 14 individuals were observed of which 12 were provided with

a nail on both the right and the left, 1 with a well developed nail on the left, but none on the right.

And among the bastards of the fowls we have found the followings :—

Bastard Fowls	Sex.	L.R. P.	L.R. P.B.	L.R. B.P.	L.R. P.O.	L.R. O.P.	L.R. A.P.	L.R. P.A.	L.R. A.	Sum.
(Naganaki × Kukin) F ₁	♀	1							1	1
	♂	2								3
(Rumpless × Black Bantam) F ₁	♀	2			1	1				2
	♂	1								3
(" × ") F ₂	♀	2								2
(" × ") F ₁										
Chicken	♂	1								1
(" × ")										
× Rumpless	♀	1								1
Katura × Rumpless	♀	1								1
(Katura × Rumpless) × Katura	♂	1								1
White Bantam × Black Bantam	♂	2								2
		14			1	1			1	17

17 specimen were thus observed, of which 14 with a nail both on the right and the left, 1 on the left, and 1 on the right, while 1 with the Anlage on both the thumbs.

Thus it will be shown that the presence of a claw on the thumbs is not of rare occurrence as has hitherto been conjectured, especially among domestic fowls.

In conclusion I have to thank heartily to Professor Dr. ISHIKAWA who has not only directed me to the present work, but has also kindly prepared the above note for me. It is also of interest to state that I have also examined many other birds on this point and have got rather extensive finds in a large number of species which were accessible to me. These I like to publish at some future occasions. But the most interesting thing on this matter is the fact that the presence of a claw or claws on the fingers of birds were observed by a great authority on birds, Mr. DeWitt MILLER, the Curator on birds in the American Museum of Natural History, New York City, very extensively, and indeed, long before my investigation. This fact was communicated to me by Prof. ISHIKAWA, who, while staying in New York City, last November, talked with this gentleman on this subject. Mr. MILLER not only allowed me to publish this note, the main facts of which he himself had found long ago but also told to Prof. ISHIKAWA that he was greatly satisfied with

what I discovered independently. In admiration for his noble-mindedness I wish to extend my warmest respect to him.

Fig. 1.

Fig. 2.

Fig. 3.

Fig. 4.

Fig. 1. Longitudinal (slightly oblique) section of a claw on thumb of a bastard chicken of 6 months old ♂ between White Leghorn ♀ and (Naganaki × Kakin ♀). Magnified 24 diameters.

Fig. 2. Nail on thumb of a White Leghorn, exposed to view. Nat. size.

Fig. 3. Same of Japanese Rumpless fowl. Nat. size.

Fig. 4. Same of a bastard between Naganaki and Kakin. Nat. size.