

REMARKS ON THE *TRACHICHTHYS* OF PORT JACKSON.

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It having become necessary during the past month that I should examine the Beryciform fishes in the Australian Museum, I took the opportunity to pay special attention to the specimens of *Trachichthys* therein contained, and as my researches have convinced me that there is but one species found in these waters, I think it but right to lay the premises upon which I base my conclusion before this society in order that those who are interested may judge for themselves whether my rejection of *T. jacksoniensis* as a valid species is justified or not.

I have at present available for examination six examples taken in Port Jackson ; they are catalogued as follows :—

a.	A. 12916	Kiribilli Pt., N. Shore.	Presented by Mr. H. Cadell.
b.	B. 2313	Port Jackson.	„ „ Dr. Eichler.
c.	B. 5924	North Shore.	„ „ Mr. H. Cadell.
d.	B. 5925	„ „	„ „ „ „ „ „
e.	unregistered	Port Jackson.	„ „ „ J. James, Coodgee
f.	„	„ „	„ „ „ „ „ „

I shall designate each of these specimens by the alphabetical prefix attached thereto.

The Hon. Wm. Macleay, (Descr. Cat. of Aust. Fishes, Vol. i, p. 146), lays special stress on the greater number of spiniferous ventral plates, which however he allows to be variable (9-11), and in the greater height of the body. I shall endeavour to show in the following paper that these characters are unreliable, and that consequently *T. jacksoniensis* must sink to a synonym of the original *T. australis*.

Beginning then with specimen *f* which measures but four inches and is the smallest of our series I find that it possesses eight ventral plates, and the height of the body is not quite one-half of the length, without caudal (as 1 to 2·10); this then is a typical *T. australis* of Shaw, Cuvier, and Günther. Passing on now to specimen *c*, which measures over six inches we find that it also possesses eight ventral plates, but that the height of the body is rather more than half the length without caudal (as 1 to 1·90), being therefore intermediate between the two forms. Specimen *d* bears nine ventral plates, and its height is exactly half the length without caudal, thus not fulfilling the special requirements of either form, but going far to show how little dependence can be placed on such a variable character as the number of ventral plates; this example was taken at the same time and place as the preceding, and is a trifle the larger. Specimen *b* is but little larger than *f*; it bears but eight plates, but the last is twice as large as any of the others, and appears like two normal plates soldered together; I have therefore placed it among those bearing nine plates; the height of the body is more (1 to 1·88) than half the length without caudal; this is therefore a typical *T. jacksoniensis*; it measures barely $5\frac{1}{2}$ inches. Finally our last specimen, *a*, from the same locality as *c* and *d*, exceeds Mr. Macleay's limits, having no less than twelve ventral plates, while the height of the body is exactly one-half its length without caudal.

To facilitate reference to their individual differences I here give a list of the examples showing the length, number of ventral plates, and comparative height of each:—

	<i>a.</i>	<i>b.</i>	<i>c.</i>	<i>d.</i>	<i>e.</i>	<i>f.</i>
Total length in inches	5·90	4·10	6·10	6·20	5·45	4·00
Number of ventral plates	12	9	8	9	11	8
Height to length (s. c.)	1:2·00	1:1·88	1:1·90	1:2·00	1:1·85	1:2·10

I have gone thus carefully into the details of each individual, in order that, while stating it to be my conviction, that from the above facts the forms cannot be specifically separated, I can at the same time leave each one at liberty to settle the question for himself.

In the Trans. N. Zeal. Inst., vii., p. 245, Dr. Hector describes a New Zealand form under the name of *Trachichthys intermedius*, which possesses ten ventral plates, and the height of whose body is about 2.50 in the length, without caudal. This specimen, therefore, completes the chain of gradation between the high-bodied *T. jacksoniensis*, and the long-bodied *T. elongatus*, and leaves me no choice but to consider all these as forms of the same species, which must of course be known as *Trachichthys australis*.

Dr. Günther says that *T. elongatus* differs from *T. australis* in form as much as a Dace from a Crucian Carp; perhaps if we were to substitute Prussian Carp for Dace we would have a more parallel case, yet none would now-a-days think of separating *Carassius gibelio*, (or even *C. oblongus*) from *C. vulgaris*; nor, do I think, that the forms of *Trachichthys australis* can be separated.



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