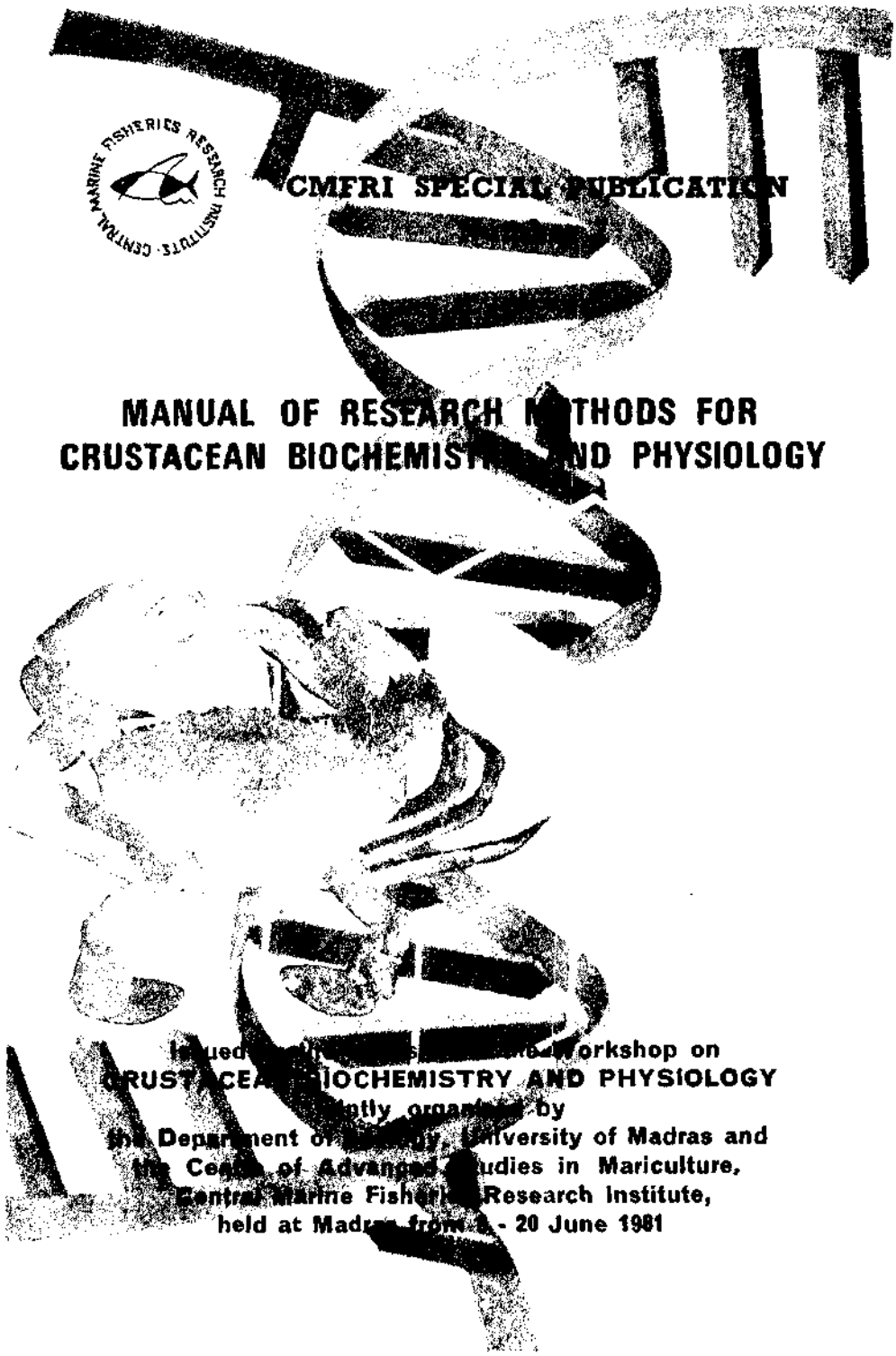
CMFRI SPECIAL PUBLICATION
Number 7

MANUAL OF RESEARCH METHODS FOR CRUSTACEAN BIOCHEMISTRY AND PHYSIOLOGY

Issued on the occasion of the Workshop on
CRUSTACEAN BIOCHEMISTRY AND PHYSIOLOGY
jointly organised by
the Department of Zoology, University of Madras and
the Centre of Advanced Studies in Mariculture,
Central Marine Fisheries Research Institute,
held at Madras from 8 - 20 June 1981



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Manual of Research Methods for Crustacean Biochemistry and Physiology

EDITED BY

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(LIMITED DISTRIBUTION)

Published by : **E. G. SILAS**
Director
Central Marine Fisheries
Research Institute
Cochin 682 018

PRINTED IN INDIA
AT THE DIOCESAN PRESS, MADRAS 600 007—1981. C2375.

2 DRY WEIGHT, WATER AND ASH CONTENTS *

2.1 PRINCIPLE

The wet (fresh) tissue is allowed to dry by keeping it in a desiccator. The difference between the wet weight of the tissue and its dry weight gives the amount of water present in the fresh tissue (Passoneau & Williams, 1953; Mullainadhan, 1979). On heating the dry material to higher temperature (550-600°C) all the organic constituents are burnt leaving only the inorganic constituents in the form of ash.

2.2 PROCEDURE

1. Take a small amount of tissue on previously weighed plastic slip.
2. Find out the weight of the tissue (=wet weight).
3. Keep the tissue along with the plastic slip in a desiccator maintaining 0-5% R.H.
4. Dry the tissue in the desiccator till it reaches a constant weight.
5. Keep the dry material in a porecelain crucible and heat it at 550-600°C in an incinerator for 4 hours.
6. Find out the weight of the ash.

2.3. CALCULATIONS

2.3.1. Dry weight

$$\frac{\text{Dry weight}}{\text{Wet weight}} \times 100 = \quad /100 \text{ gm wet weight (gm \%)}$$

* Prepared and verified by P. Mullainadhan, School of Pathobiology, Department of Zoology, University of Madras, Madras-600 005.

2.3.2. Water content

$$\frac{\text{Wet weight-dry weight}}{\text{Wet weight}} \times 100 = \text{/100 gm wet weight (gm \%)}$$

2.3.3. Ash content

$$\frac{\text{Ash content}}{\text{Dry weight}} \times 100 = \text{/100 gm dry weight (gm \%)}$$

2.4 References

Mullainadhan, P. 1979. Haemolymph water, volume and tissue water in *Scylla serrata* Forskal (Crustacea : Decapoda). M. Phil. Dissertation, University of Madras. p. 67.

Passoneau, J. V. & C. M. Williams, 1953. The molting fluid of the Cecropia silkworm. *J. Exp. Biol.*, 30 : 545-560.

For your own notes

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