

**OBSERVATIONS ON NEW
VEGETABLE FOSSILS OF
THE AURIFEROUS DRIFTS**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649279746

Observations on New Vegetable Fossils of the Auriferous Drifts by Ferdinand von Mueller

Except for use in any review, the reproduction or utilisation of this work in whole or in part in any form by any electronic, mechanical or other means, now known or hereafter invented, including xerography, photocopying and recording, or in any information storage or retrieval system, is forbidden without the permission of the publisher, Trieste Publishing Pty Ltd, PO Box 1576 Collingwood, Victoria 3066 Australia.

All rights reserved.

Edited by Trieste Publishing Pty Ltd.
Cover @ 2017

This book is sold subject to the condition that it shall not, by way of trade or otherwise, be lent, re-sold, hired out, or otherwise circulated without the publisher's prior consent in any form or binding or cover other than that in which it is published and without a similar condition including this condition being imposed on the subsequent purchaser.

www.triestepublishing.com

FERDINAND VON MUELLER

**OBSERVATIONS ON NEW
VEGETABLE FOSSILS OF
THE AURIFEROUS DRIFTS**

Geological Survey of Victoria.

OBSERVATIONS

ON

NEW VEGETABLE FOSSILS

OF THE

AURIFEROUS DRIFTS;

BY

BARON FERDINAND VON MUELLER,

K.C.M.G., M.D., Ph.D., F.R.S., F.L.S. and F.R.E.; Government Botanist.

"OMNIBUS SCIENTIARUM LIBRARIUM, ET BIBLIOTHECAE HISTORICAE AUSTRIACAE, ET MUSEI HISTORICAE NATURALIS VIENNAE."—*Proposita Acta*, cap. II, §.

SECOND DECADE.



STANFORD LIBRARY

MELBOURNE:

BY AUTHORITY: JOHN FERRES, GOVERNMENT PRINTER.

LONDON:

TRUBNER AND CO., 57 AND 59 LUDGATE HILL.

MDCCLXXXIII.

S*

214943

STANFORD LIBRARY

STATE LIBRARY

OBSERVATIONS
OR
NEW VEGETABLE FOSSILS OF THE
AURIFEROUS DRIFTS,

By BARON FERD. VON MUELLER,

K.C.M.G., Ph.D., M.D., F.R.S., F.G.S., Government Botanist for Victoria.

XYLOCARYON.

F. v. M. in Reports of the Mining Surveyors and Registrars, June 1875.

Fruit large, globular, unilocular, one-seeded, wrinkled and foveolar-impressed. Pericarp of very thick woody consistence, with five to six very prominent obtuse longitudinal ridges protruding into the cavity. Seed large, lengthwise sinuously five- or six-lobed by the intrusions of the pericarp, closely fitted to the cavity. Testa smooth.

Derivation of the systematic name from *xylon*, wood and *carpon*, nut.

XYLOCARYON LOCKII.

In sedimentary strata at Nintingbool, probably of the lower pliocene state. J. Lynch, Esq.

The whole material, on which the description and also Major Shepherd's drawing are founded, consists of two specimens of the fruit solely. As may be noted from the lithographic illustration, these fruits measure fully 2 inches across, and rather more in length. The average thickness of the pericarp is $\frac{1}{4}$ inch; but where it passes into the cavity and penetrates the seed its width attains to 1 inch. The seed, though closely pressed into the cavity, seems free, except at one extremity; but as no remnant of the fruit-stalk or its cicatrix remains observable on the specimens hitherto gathered, the position of the seed, whether erect or inverse,

cannot as yet be determined. The seed in its widest diameter measures nearly $1\frac{1}{2}$ inbh., and its height about the same. Its lobes are considerably or very much broader than the sinuosities and very blunt, but they become evanescent towards the upper and lower extremities; the pericarpal processes penetrate the seed to nearly one-half its width, or even more. The testa is externally smooth; it seems to have been crustaceous; but by prior infiltration it is internally densely beset in our two specimens with a stratum of bisulphide of iron. As in most fossil seeds, so also in this instance, the embryonic structure and the presence or absence of the albuminous body remain unascertainable.

This grand fruit of probably a large tree of a long bygone age was dedicated to the late R. H. Lock, Esq., who with enlightened views was among the very first to draw attention to the Nintingbool fossils, and to cause them to be secured for palaeontographic elucidation.

It might be added, that the genus *Xylocaryon* would probably best find a place in any systematic arrangement among Olacineæ, of which order as yet no member stands on palaeontologic record. Should this conjecture be borne out by future disclosures from more instructive material, then *Xylocaryon* would take its place in the systematic series near *Phlebocalumna* (Griffith, in Bentham et Hooker's *Genera Plantarum*, i. 353) of which Indian genus a new representative has been detected in Queensland (F. v. Mueller, *Fragments Phytographiæ Australiæ*, ix. 151). Affinity would also draw our fossil near to *Gonocaryum* (Miquel, *Prodromus Floræ Sumatransæ*, 343), the fruit of which has recently been described by Dr. Scheffer (*Annales du Jardin Botanique de Buitenzorg*, i. 18), the close relationship between *Gonocaryum* and *Villaresia* being thus established.

In the locality of discovery this new fossil was accompanied by many of the fruits, previously obtained from the Nintingbool-layers; thus by *Spondylostrobos Smythii* (which there, though very rarely, produces a trimerous cone), by *Conchotheca rotundata*, by a six-valved variety of *Penteune brachyclinis*, by *P. trachyclinis* (which latter in its though rare four-valved fruit bears much resemblance to *Phymatocaryon Mackayi*), then by the last-mentioned fossil, also by *Platycoila Sullivani* and *Rhytidotheca Lynchii* (in which latter, according to the position of the seeds for their wing-like expansion on one side no space is left); but according to the present sending a far more copious mass of *Celyphina MacCoyi* and *Plesiocapparis prisca* associates with the *Xylocaryon*; while forms both of *Celyphina* and *Plesiocapparis* do occur, which give to each other, as also to the *Xylocaryon*, a mutual external similarity, although the comparatively brittle shell and the ridgeless cavity of the two former exhibit wide distinctions from the still thicker, tough and not fragile pericarp and the sinuous short subdivisions of the *Xylocaryon*-fruit. It is indeed not always easy to discriminate between varieties of *Celyphina* with larger and also turgid fruits in comparison with smaller forms of the fruit of *Plesiocapparis*. In the former, however, the cavity is always of much less width, the pericarp of greater thickness with a more or less manifest tendency to compression, which could not have arisen from mechanic or accidental pressure alone. The seeds of *Celyphina* are still unknown; but the *Plesiocapparis*-fruit has now been found to contain a pulpy mass; whether this pulp was analogous to

Plate XI



that of the Capers or is merely the result of decomposition of one or more large and perhaps soft seeds, which may have been the only ones coming normally to maturity, remains to be further investigated, and therewith also the validity of the temporary position of *Plesiocapparis* among Capparidæ. For this purpose specimens from a locality, where they were subjected to no protracted submerision in watery layers of soil, would likely give the safest results. Some of the fruits of *Spondylostrobos*, brought to light on the present occasion, are of enormous size; when the surface of these is smoothened by detritus, then it is only through dissection and the microscopic examination of the woody tissue, that the *Spondylostrobos* cone can be readily distinguished from small and equally water-worn forms of *Plesiocapparis* and even *Celyphina*. Attention to this is purposely directed here, because the miners, who may be anxious to add thus far to our palæontologic collections, may possibly deem three or more perfectly distinct fossils, which by mollification or external abrasion have become disguised, as absolutely identical.

By the aid of this new disinterment of fossil fruits the remarkable fact seems established, which to some extent was elicited already by former seedings, that the range of *variability* in reference to the *size of these fruits*, but not in regard to their structure, was much greater than is observed in cognate now living plants; and a clime would seem to be thereby indicated at the earliest pliocene age, or possibly at the last miocene times, singularly genial for admitting of an unusually exuberant development of the trees, at least so far as their fruits are concerned, during that now comparatively remote epoch.

EXPLANATION OF LITHOGRAM.

PLATE XI.

Fig. 1, side-views of the whole fruit. Fig. 2, transverse section of the same. Fig. 3, seeds. All natural size.

RHYTIDOCARYON.

F. v. M. in Annual Report of the Department of Mines of New South Wales, 1875, p. 124, pl. I.

Fruit spherical or slightly ovate, not distinctly dehiscent, one-seeded, with an oblique basal or slightly lateral attachment, woody or bony, externally wrinkled and somewhat tuberculate. Septum large, placental-like, erect or slightly ascending from the bottom of the cavity, consisting of two portions, both smooth, turgid, oblique ovate or sometimes broadly clavate or roundish, always more or less contracted at the base, mutually connate at the middle, rounded at the edges, broadly adnate to the lateral parts of the cavity, free from its summit. Seed cylindrical, bent around the placental or septal protrusion, oblique orbicular- or ovate-hippocrepical in outline, with a marginal furrow. Testa thin, brittle, smooth.

RHYTIDOCARYON WILKINSONII.

Bengree, under basalt, at a depth of 110 feet; Mr. Edward Farr; communicated by Mr. C. S. Wilkinson. Found also between Carcoar and Orange, by the Rev.