

**COLUMNAE ADIPOSÆ. A
NEWLY-DESCRIBED STRUCTURE
OF THE CUTIS VERA, WITH ITS
PATHOLOGICAL SIGNIFICANCE
IN CARBUNCLE**

Published @ 2017 Trieste Publishing Pty Ltd

ISBN 9780649228003

Columnae adiposae. A newly-described structure of the cutis vera, with its pathological significance in carbuncle by J. Collins Warren

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

J. COLLINS WARREN

**COLUMNAE ADIPOSÆ. A
NEWLY-DESCRIBED STRUCTURE
OF THE CUTIS VERA, WITH ITS
PATHOLOGICAL SIGNIFICANCE
IN CARBUNCLE**

COLUMNÆ ADIPOSÆ.

A NEWLY-DESCRIBED STRUCTURE OF THE
CUTIS VERA,

WITH ITS PATHOLOGICAL SIGNIFICANCE IN

CARBUNCLE

AND OTHER AFFECTIONS.

BY

J. COLLINS WARREN, M. D.,

INSTRUCTOR IN SURGERY, HARVARD UNIVERSITY; SURGEON TO THE MASSACHUSETTS GENERAL HOSPITAL.

LANE LIBRARY

CAMBRIDGE :

Printed at the Riverside Press.

1882.

K.

THE LIBRARY

T 221
W 28
1882

PREFACE.

PORTIONS of this paper have been printed from time to time in the Boston Medical and Surgical Journal. The article on The Anatomy of the Thick Cutis Vera has been prepared for a work entitled A Manual of Histology, edited by Dr. Satterthwaite, and published by Wm. Wood & Co., soon to appear. They are collected together in the present form for the purpose of portraying fully and illustrating the pathological bearings of a structure which, until first described by the author several years ago, had remained unrecognized. The existence of slender columns of adipose tissue perforating the thick cutis vera was first called to his attention in examining a case of sarcoma, when the diseased elements brought into light a structure which, although hardly microscopical in its dimensions, is easily overlooked: partly because of its existence only in skin which is rarely examined, and partly, also, for the reason that it is only seen there when sections are made in the proper direction. That it is a well-defined anatomical structure with constant characteristics has been amply verified by observation extending over several years.

Boston, January 1, 1881.



THE ANATOMY OF THE THICK CUTIS VERA.

THE portions of the skin usually selected for histological purposes are those in which the papillæ or hairs are best shown. The glands are also carefully described, but little attention has been given to the anatomy of the cutis vera as an organ by itself; consequently these parts have not been examined where it is found in its most highly developed form.

The skin varies greatly in thickness; on the inside of the arms and thighs, and on the anterior aspect of the body generally, it is much thinner than behind. In the former case, particularly in delicate women, it is exceedingly soft and pliable, a thin fold being easily raised and rolled between the thumb and finger. In the latter it is exceedingly thick, in the back and shoulders of hardy adults appearing as a veritable hide, being much thicker than the skin of many pachydermatous animals. Here it measures 5.5 mm., and even more, in thickness; when tanned it resembles sole leather. This structure is composed of bundles of fibres interwoven in various directions. On the surface of these bundles lie the flat connective-tissue cells, disposed in rows and occupying the intervals, the tissue being somewhat analogous to tendon. The cutis is, in fact, a sort of tendon or aponeurosis; from its under surface it sends out fibrous prolongations of considerable size, and in some animals these are actu-

ally attached to muscles.¹ In man we find them dipping down into the subcutaneous fat, in the back forming a very dense and firm mesh-work. Fatty tumors growing in this part of the panniculus adiposus are, for this reason, extremely difficult to enucleate.

The papillæ are but imperfectly formed, and are for the most part represented by an undulating line; at short intervals are the follicles of the lanugo hairs, which penetrate only the superficial layers of the cutis, the sweep of whose fibres would be otherwise unbroken were it not for the existence of a structure, hitherto undescribed,² which connects the bases of the hair follicle with those parts in which we find the roots of the longer hairs imbedded, — the panniculus adiposus. This consists of a nearly vertical cleft or slender, columnar-shaped space, extending from the last-named structure in a somewhat oblique direction through the deeper and middle layers of the cutis, and terminating at the base of the follicle which rests upon it. This space is occupied by adipose tissue in its entire length; hence the term fat column or fat canal³ would seem to be an appropriate name. (Figure 1.) The length of this space is about four mm.; its width rather exceeds that of the hair follicle above. Its long axis is placed at a slight angle to that of the follicle, which in most cases is nearly perpendicular to the surface, and

¹ M. Rensut, Anatomie générale de la Peau, Annales de Dermatologie et de Syphillographie, tome ix., No. 5. Satterthwaite, New York Medical Journal, July, 1875.

² In the latest treatises of the skin no such structure is described. See Die Hautkrankheiten für Aerzte und Studierende, von Dr. Gustav Behrend, Berlin, 1879. Pathologie und Therapie der Hautkrankheiten, von Dr. Moriz Kaposi, Wien, 1879.

³ Note on the Anatomy and Pathology of the Skin, by Dr. J. C. Warren, Boston Medical and Surgical Journal, April 19, 1877.

is nearly parallel to that of the erector pili muscle (*b*). At about the middle of this axis are given off two horizontal prolongations, usually partially filled with fat tissue, appearing like a pair of extended arms or the remaining branches of a leafless trunk (*p*). Near this point is suspended the coil of a sweat gland (*e*), held in place by a few delicate fibres which find their insertion at the top of the canal or cleft. The duct of the gland runs to the top of this space, whence it may be traced to the side of the hair follicle, where it finds its way to the surface. (In dogs the sweat duct opens directly into the follicle a short distance from its mouth.) The fibres of the cutis appear, in vertical sections, to terminate abruptly at its edges. There does not appear to be any structure resembling a "limiting membrane." At its base there is sometimes a slight widening of the cleft, and on the side towards which its axis leans the fibres of the cutis collect to form a bundle which penetrates the subcutaneous fat. (*Cônes fibreux de la peau, k.*) The upper extremity is rounded off in somewhat dome shape. In lean subjects the fat may be entirely absent. The cleft is then seen occupied by a blood-vessel in its axis and at its top by a sweat gland, the lateral space being filled by a loose reticulum of very fine fibres and connective-tissue cells.

The erector pili muscle, taking its origin from the papillary layer of the cutis, is inserted partly into the base of the follicle, which its fibres embrace, and partly into the structures forming the apex of the fat canal. In some sections the fibres seem to penetrate this space, but probably surround it, although some fibres may be attached to those delicate bands of fibrous tissue which