

THE DIGESTION AND ASSIMILATION OF FAT IN THE HUMAN BODY

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The digestion and assimilation of fat in the human body by H. Critchett Bartlett

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H. CRITCHETT BARTLETT

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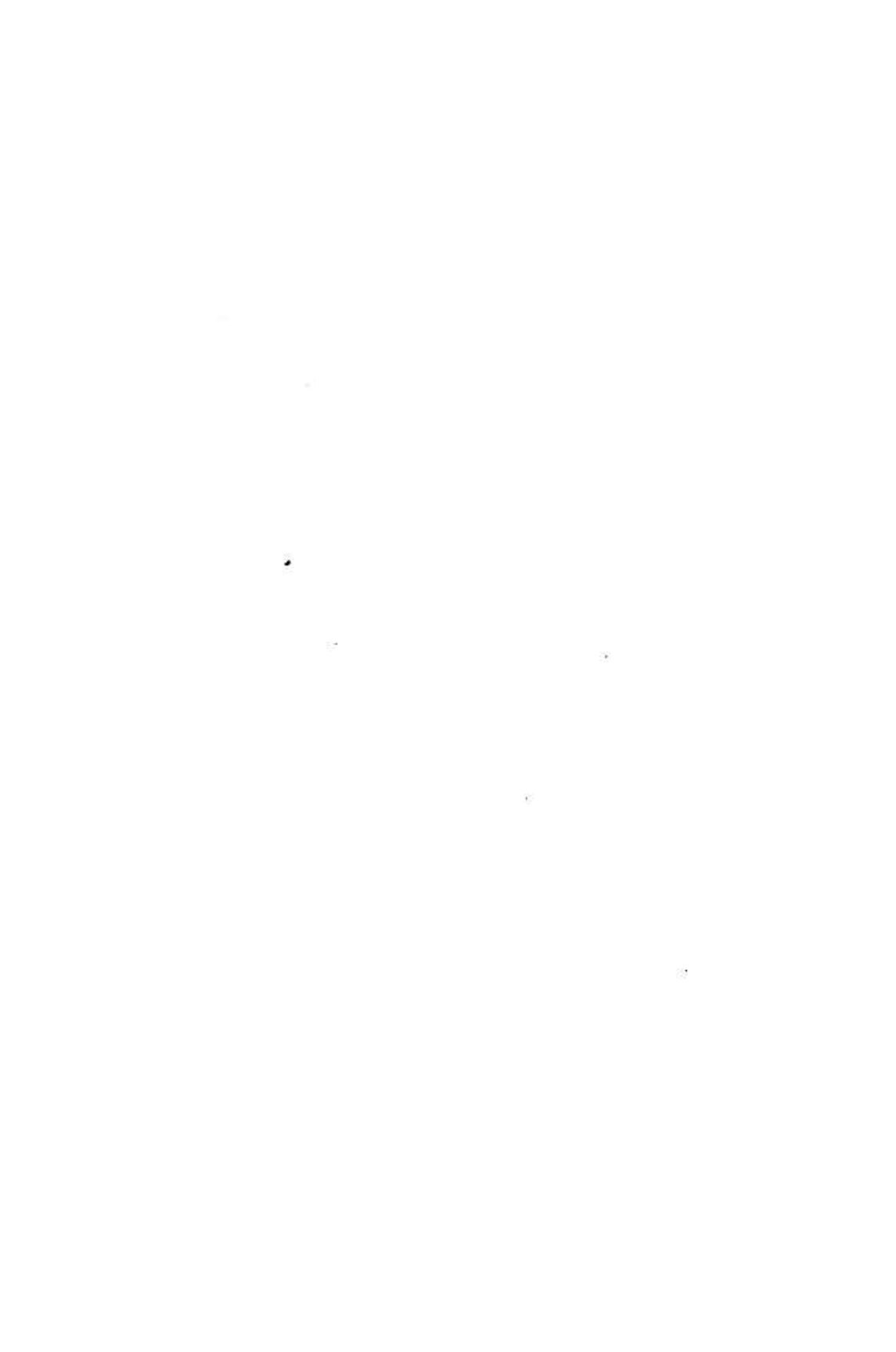
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PHYSIOLOGICAL AND CHEMICAL EXPERIMENTS BEARING
ON THIS SUBJECT.

BY
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CONTENTS.

| | PAGE |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------|
| INTRODUCTION | 5 |
| CHAPTER I. | |
| A Brief Account of the Circumstances, Experiments, and Considerations leading to what is believed to be an Elucidation of the Digestion and Absorption of Fatty Matters | 9 |
| Description of some of the Reactions and Functions of Pancreatic Fluid | 10 |
| Analytical Processes for the Separation of the Active Principles and other Components | 14 |
| The Fermentative Nature of the Pancreatic Principles | 19 |
| The Emulsifying Power of the Pancreatic Fluid | 22 |
| The Manner in which a New Principle is thought to have been Detected and Confirmed | 25 |
| CHAPTER II. | |
| A Slight Sketch of the Physiology and Chemistry, relating to the Preliminary Digestion of Fats | 29 |
| CHAPTER III. | |
| The Digestion of Fat in the Small Intestine | 34 |
| CHAPTER IV. | |
| Artificial Aids to the Digestion of Fat | 40 |
| ADDENDUM. | |
| Early Evidence of the Commencement of Wasting Diseases discovered by the Excretion of Soluble Fat | 45 |

THE DIGESTION AND ASSIMILATION OF FAT IN THE HUMAN BODY.

INTRODUCTION.

TOWARDS the autumn of 1872, a somewhat warm controversy sprung up between the late Dr. Edward Smith and myself, among others, respecting the proportional nutriment and digestibility of certain articles of preserved food, particularly in regard to "Australian meat" and "condensed milk."

The numerous letters which appeared in *The Times* and *Standard*, together with the more elaborate arguments brought forward in the columns of several scientific journals, attracted the attention of my esteemed friend and teacher, Baron von Liebig. A very interesting correspondence ensued, discussing minutely the various questions at issue.

Among other valuable results, I may incidentally mention the final repudiation by Liebig of the untenable assumption that his own "*extractum carnis*" was of a food value bearing any close relation to the nutriment contained in the whole bulk of meat from which it had been extracted. This candid admission of mistaken

views, which were previously advanced with no little firmness and pertinacity, exhibited a great mind rising superior to every self-interest and prejudice. As a direct consequence of our intercommunication, this was naturally highly gratifying to me; but it is as an instructive example, which may be borne in mind by all scientific writers, no matter how distinguished their position, that such a recantation should be regarded.*

During the progress of the discussion, Liebig expressed a wish that I should place myself in communication with Drs. Playfair and Bence Jones. The former was away from London at the time, and when in town was necessarily absorbed by the cares of high official duties, I therefore invoked the kindly assistance of the secretary of the Royal Institution.

Dr. Bence Jones advised that a number of experiments on the digestion of food should be undertaken; and, after much consideration, wrote to me, suggesting the tabulation of a very lengthy series of reactions, only to be attained by a course of investigation extending over several years.

The various proximate principles of food were to be administered without any mixture with other matters, except water. The reactions to be recorded were as to acidity, neutrality, or alkalinity during each stage of digestion, from the mouth to the lower bowel. Not only was the food mass to be thus tested, but my far-seeing adviser was still more interested in obtaining similar indications respecting the different conditions of the various digestive juices. They were to be taken just as

* A precedent so frank was not lost on Dr. Edward Smith, who in his later writings also virtually admitted that he had entertained erroneous views even on the main points of the controversy.

secreted in their respective glands during the digestion of each single component of food, the like observations being registered before and after digestional activity. Even beyond this, it was considered very desirable that the muscular tissues surrounding the digestive organs should be equally carefully tested, for reasons which I scarcely understood the important bearings of at the time.

While the processes of digestion in life were to be studied to afford the closest possible insight into the laws which govern the solution and absorption of the various food principles, the artificial digestion of single components of food, to be afterwards supplemented by simple combinations, was proposed to be experimented on in the laboratory with a completeness I have not yet been able to fully carry out.

Here was a programme ambitious enough, if affording any promise of leading up to a thorough comprehension of the true principles of the digestion of food, however complex in their alternations and combinations in the living human economy. Dr. Bence Jones was quite persuaded that such a course of experiments would contribute, at least, to the foundation of such knowledge, and he was eager to obtain the information to be acquired by this means.

I have so far quoted from such of his letters as I have still by me. Whether he would have considered his anticipations justified by the progress since made, I cannot presume to decide; but of this I am fully conscious, that in losing the benefit of his co-operation, advice, and encouragement, at his decease in the following year, many of the immediate scientific deductions logically to be drawn from the experiments made have been lost for ever.