it of great use where the introduction of rectal specula had proved painful, and in one case, after injecting some into the rectum, he was able to remove some polypoid growths painlessly.

The President agreed with Dr. Holt that it was difficult to understand how cure of the rectal ulcerations affected the disease situated higher up, yet in many cases just such relief followed the application of nitric acid to the rectal ulcers.—*New York Medical Journal.*

ON PAPAIN AND ITS USE IN THE TREATMENT OF DYSPEPSIA.

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For some time past, a drug has been before the medical world, called papaïn, which claims to be able to replace pepsin and pancreatin in medicine, but, for several reasons, has not come into general use. It is a powder, and is prepared from the juice of the *Carica papaia*, or melon-tree. There are at present two chief varieties of this drug on the market: namely, that sold by Christy, with which most of the experiments up to recently have been made, it having been before the profession some considerable time; and a papaïn quite lately introduced into this country, and prepared according to the process of Professor Finkler, who occupies the chair of physiology at the University of Bonn, and who for the last few years has been experimenting with the digestive ferments. This latter (papaïn, Finkler) is likely to prove of considerable use, as it is without the imperfections which have prevented papaïn (Christy) from doing so. In the first place, it is cheaper; in the second, it is less energetic. This we shall show to be a *sine qud non.*

I will commence by an account of its properties as determined by Professor Finkler, which will advantageously compare with those of pepsin and pancreatin. 1. It digests equally in acid, alkaline, or neutral fluids, best of all in water. 2. It will dissolve 1,000 times its own weight of fresh blood-fibrin. 3. Its action is increased by the presence of pepsin and pancreatin. 4. It acts at the temperature of the body. 5. Meat infused with a solution of papaïn keeps, while undergoing a softening process, much longer than it does without it. From this, it can be inferred that it has an antiseptic as well as a peptonising action. 6. The product of its action is a pepton, which, from its properties, may be taken to be Meissner's *c* pepton. 7. Papaïn adheres to albumen to such a degree as to prevent its being removed by protracted washing with water. 8. Papaïn, in contrast to pepsin, acts when the resulting pepton-solution is highly concentrated. 9. The addition of antiseptics, such as salicylic or carbolic acids, does not interfere with its action. Hence, in papaïn (Finkler), we have apparently an ideal digestive ferment.

I will now pass on to consider the difference in properties of papaïn (Christy), and papaïn (Finkler). In experimenting with them, and comparing the results, it appears at first sight that the former is much more energetic than the latter; but, on further investigation, it will be seen that this apparent virtue really unfits it for internal use, inasmuch as, not content with converting the fibrin into pepton, it again splits it up into bodies soluble in alcohol, and analogous to leucin and tyrosin, which, so far from being of any use in digestion, are absolutely injurious. It is therefore evident that the chemical and medicinal results must be kept apart.

If .01 gramme of papaïn (Finkler) be placed with 10 grammes of fresh blood-fibrin, and 50cc. of water, at 45° to 50°C. (113 and 122 Fahr.), and put into an oven of the same temperature, the solution takes place in from forty-eight to eighty hours. If, on the other hand, papaïn (Christy), be used instead, in the same experiment, the solution takes place in a much shorter time. But here an important distinction comes in.

If to the result of each experiment be added 10 grammes of fresh blood-fibrin, it will be found that the papaïn (Finkler) will still dissolve this in twenty hours, while that containing the papaïn (Christy) will not dissolve at all. This proves that the former is a true catalytic ferment, and that the latter is not. An alcoholic extract of the latter will also show the presence of the leucin and tyrosin