

a supplement for 4 days (period II). Later the dosage of vitamin A was doubled for further 3 days (period III) and in the last period (period IV), the supplement of vitamin A was withdrawn. Milk samples were collected daily from each animal and cream was obtained by mechanical separation. The cream was heated to 115° C. and the clarified fat was assayed for vitamin A by the procedure already reported.<sup>4</sup> The results are graphically presented in Fig. 1.

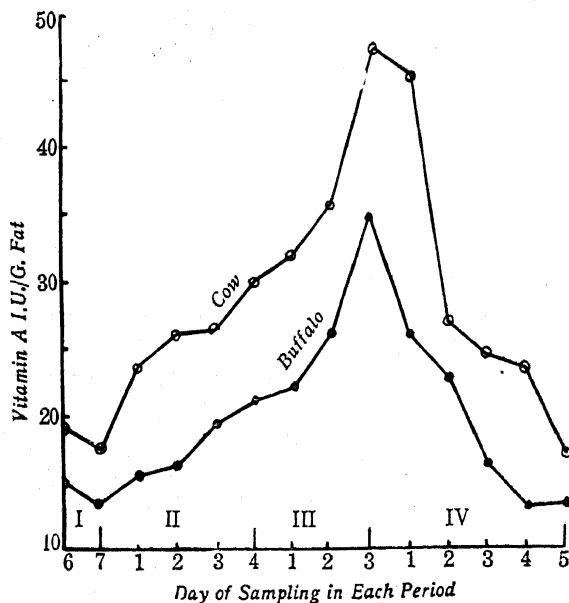


FIG. 1

It can be seen that the feeding of water miscible form increases the vitamin A content of the milkfat and doubling the dosage leads to a further increase. This is true for the vitamin A content of the milk also.

The separated milk was analysed for vitamin A by adopting the method of Koehn.<sup>5</sup> This method consisted in refluxing 100 g. of separated milk with 100 ml. of alcohol and 50 ml. of 60 per cent. KOH for 10 min. and extracting the solution with ether 3 times. The combined ether extract was completely evaporated and taken up in chloroform for the colorimetric determination of vitamin A in the usual way. By using this method the authors were able to account for practically all the vitamin A in separated milk fortified with water-miscible vitamin A. However, no vitamin A could be detected in any of the skim milk samples obtained during periods II and III when the animals were receiving water-miscible vitamin A. This shows that the feeding of water-miscible form of vitamin A leads to an increase in the vitamin A content of the milkfat only without showing any effect on the skim milk. The water-miscible form is thus converted into oil-soluble form in the animal system.

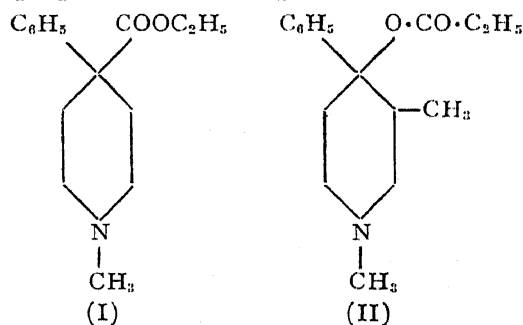
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Indian Dairy Res. Inst., K. M. NARAYANAN.  
Bangalore, C. P. ANANTAKRISHNAN.  
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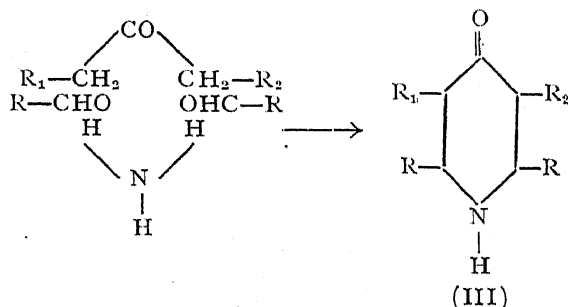
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### SYNTHESIS OF SOME 4-PIPERIDONE DERIVATIVES

THE discovery that Pethidine (I) (also called Demerol, Meperidine, Dolantin or Isonipecaïne) and Nisentil<sup>1</sup> (II) are potent analgesics has stimulated great interest in the chemistry of piperidines. In recent years, several piperidine derivatives have been synthesised with a view to examine their pharmacological properties. The preparation of compounds of the type II



involves the use of 4-piperidones of the type III, and many such compounds have been prepared by employing the method of Noller and Baliah<sup>2</sup> and are reported herein. The reaction may be schematically represented as below:



The experimental procedure adopted in each case was as follows: a mixture of the ketone (1 mole), aldehyde (2 moles) and ammonium