Gram-negative organisms. In a recent publication[2] a plant antibiotic effective against even acid-fast organisms has been described. The present communication deals with the antibacterial properties of the extracts of the root of *Moringa pterygosperma*.

It was found that alcoholic extracts of different parts of *M. pterygosperma* showed pronounced antibiotic activity. The maximum activity was found to be in the roots. Apart from the work on the alkaloids[3,4], there is practically no information regarding the other principles present in the root of this plant. The separation of the antibacterial substance present in the root, which has been provisionally named 'pterygospermin', was therefore undertaken.

We adopted the following procedure. The root was cut into small pieces and extracted overnight in the cold with absolute alcohol. The alcoholic extract was then shaken well with active carbon, when 'pterygospermin' was completely adsorbed on the carbon. Elution with petroleum ether and subsequent removal of the latter in vacuum furnished an oil having a highly irritating smell. The oil is soluble in alcohol, and is the most active product yet obtained. The antibiotic is only slightly soluble in water, but forms an emulsion at high concentrations.

The accompanying table gives the antibacterial spectra of the substance isolated.

Organism	Dilution of antibiotic in media 1/20,000	1/30,000	1/40,000	1/50,000	1/75,000	1/100,000
1. *B. subtilis*	—	—	—	—	—	+
2. *S. aureus*	—	—	—	—	—	+
3. *B. dysenteriæ* Flexner	—	—	—	+	+	+
4. *B. aerogenes*	+	+	+	+	+	+
5. *B. paratyphosus* B	—	—	—	+	+	+
6. *B. paratyphosus* C	—	—	+	+	+	+
7. *B. typhosus*	—	—	—	+	+	+
8. *B. coli*	+	+	+	+	+	+
9. *B. enteritidis*	—	—	+	+	+	+

— indicates no growth ; + indicates growth.

Pterygospermin exhibits pronounced antibacterial activity against both Gram-positive and Gram-negative organisms, the former being inhibited at a dilution of 1 in 75,000 and the latter at 1 in 40,000. Preliminary experiments with an acid-fast organism *Mycobacterium phlei* show that the antibiotic inhibits the growth of this organism at a dilution of about 1 in 30,000. Further work regarding its activity against *M. tuberculosis*, and pathogenic fungi, its toxicity, use as a chemotherapeutic agent, as well as its properties as an antibiotic are in progress.

Our thanks are due to Prof. V. Subrahmanyan, Drs. N. N. De and K. P. Menon for their interest and valuable suggestions. We gratefully acknowledge generous support from the Council of Scientific and Industrial Research, under the auspices of which this work is being carried out.

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Transfer of Phosphate by Coenzyme I

In 1938, Ostern *et al.*[1] put forward a hypothesis according to which the function of coenzyme I is to transfer phosphate. It was suggested that the coenzyme in muscle, while taking up two hydrogen atoms in the pyridine nucleus through the addition of free phosphate, undergoes a phosphorolysis and is split into pyridin nucleotide and adenosine diphosphoric or triphosphoric acid. After the splitting off of phosphate, the adenine part of the coenzyme molecule recombines with the pyridine nucleotide part. In yeast, however, this mechanism was assumed to function in a somewhat different way, on account of the ability of the yeast enzyme to phosphorylate adenosine. Here also the hydrogenation would be accompanied by a hydrolysis of the coenzyme molecule followed by a transfer of the phosphate of the adenylic acid to other phosphate acceptors. In the regeneration of the coenzyme molecule occurring through the dehydrogenation of the pyridine nucleus, inorganic phosphate is said to be taken up. The validity of this hypothesis was tested in experiments *in vitro* by Meyerhof *et al.*[2]. With the aid of radioactive phosphate they showed that the coenzyme I did not incorporate phosphate either at the hydrogen transfer or at the phosphate transfer.

We have carried out similar experiments with a complete apozymase fermentation system containing radioactive orthophosphate. The coenzyme recovered after the evolution of a considerable amount of carbon dioxide did not show any radioactivity. Experiments *in vivo* with baker's yeast demonstrated, however, that radioactive phosphate introduced into the cells was incorporated into the coenzyme molecule (329 mgm. coenzyme isolated from 6 kgm. yeast treated in 5·5 litres of liquid for one hour with 0·1 milli-Curie showed an activity corresponding to $22{\cdot}9 \times 10^{-6}$ milli-Curie). The rate of this process was under certain conditions dependent on the rate of metabolism ; but the phosphate exchange also took place in the absence of exogenous substrate at low temperature (+4° C.), though at a very slow rate. From this we conclude that the function of coenzyme I is to transfer phosphate, and that the systems *in vitro* used by Meyerhof *et al.* and by us do not reproduce the conditions in the living cells.

The analysis of the results is being continued, and a full account will shortly appear elsewhere.

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Low-Voltage Discharge of the Electric Eel

The Amazon eel (*Electrophorus*) presents two types of discharges : one occurring in groups of high voltage, and another one, which appears in single peaks, of very low voltage[1,2].

We have made some oscillographic studies of this discharge, attributed by various authors to the bundle of Sacks. We have used an Allen B. Dumont