TABLE II

Recovery of DDT from the waste collected from the factory

DDT present in factory waste mg.	DDT added mg.	Total DDT estimated mg.	Percent recovery of DDT
0·140	0·174	0·315	100·3
0·205	0·174	0·383	101·1
0·210	0·174	0·383	99·7
0·230	0·174	0·400	99
0·250	0·174	0·414	97·6

These results confirm that this method can be used for the estimation of DDT in the untreated waste from the factory manufacturing it. Heating the residue of benzene extract of the sample in vigorously boiling water for 1 minute, removes the interference due to organic components present in the waste. The results obtained were usually on the lower side but the error was never more than 4%.

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THE EFFECT OF ISOPRENALINE ON THE BILE SECRETION OF ANAESTHETIZED DOGS

IT has been shown by several workers that adrenaline[1-3] and noradrenaline[4] diminish the secretion of bile. The biliary response to isoprenaline, which is known to be a potent β-adrenergic agent[5] does not however seem to have been investigated. The work presented here was therefore undertaken.

The experimental procedures for collection and analysis of bile are described elsewhere.[6]

Figure 1 graphically records the effect of administration of varying doses, ranging from 0·01 μg./kg. to 10 μg./kg. of isoprenaline on the rate of bile secretion. Administration of isoprenaline in all the doses first increased and then decreased the rate of bile secretion. The augmentory effect lasted for 4 minutes and the inhibitory for about 4 to 6 minutes, after which the rate returned to normal. Increasing the dose of isoprenaline resulted in the increased augmentory as well as inhibitory response

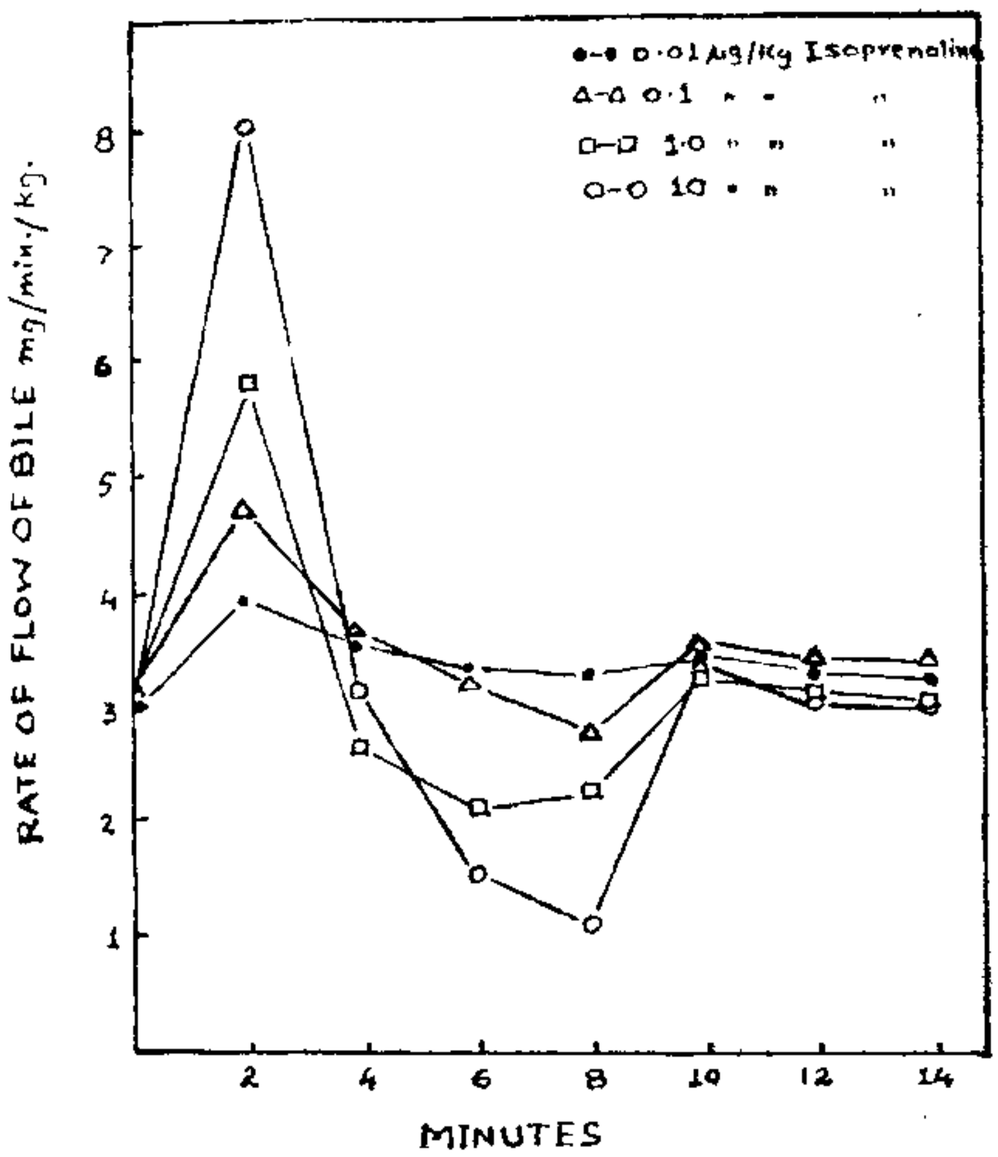

FIG. 1

(Table I). Analysis of bile shows increased bile acids and total solids and decreased cholesterol concentration in the bile collected after the administration of 10 μg./kg. of isoprenaline (Table II). These changes were maximum during the augmentory action of isoprenaline and gradually disappeared over a period of about 14-16 minutes. The concentration of bilirubin in bile was not significantly affected.

TABLE I

Percentage of augmentory and inhibitory biliary response to varying doses of isoprenaline

Dose of isoprenaline (μg./kg.)	Percentage augmentory effect	Percentage inhibitory effect
0·01	27·2	—
0·1	46·8	15·8
1·0	81·2	34·4
10·0	163·5	63·3

It is interesting to note that isoprenaline, a β-adrenergic mediator exhibits a potent choleretic action in contrast to adrenaline[1-3] and noradrenaline[4] which are known to reduce bile secretion. The increase in bile acids with concomitant decrease in cholesterol level in bile collected after the administration of isoprenaline indicates the possibility that iso-

TABLE II

Effect of 10 μg./gm. of isoprenaline on composition of bile

(*Average of 3 experiments*)

Time in minutes	Bilirubiu (g./100 ml.)	Bile acids (g./100 ml.)	Cholesterol (mg./100ml.)	Total solid (% w/w)
Conrtol ..	0·090	2·37	83·9	3·7
2 minutes ..	0·106	2·48	76·2	4·1
4 ,, ..	0·106	3·07	48·9	5·1
6 ,, ..	0·096	2·89	41·9	5·6
8 ,, ..	0·090	2·80	48·9	4·5
10 ,, ..	0·090	2·48	55·2	4·5
12 ,, ..	0·106	2·56	65·2	4·5
14 ,, ..	0·090	2·48	62·9	4·2
16 ,, ..	0·090	2·32	76·2	4·2

prenaline increases the biosynthesis of bile acids from cholesterol in liver.

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PRODUCTION OF ERGOTAMINE PRODUCING STRAINS OF ERGOT IN JAMMU AND KASHMIR

A NUMBER of attempts have been made during the last 25 years to produce ergot in the States of Madras,[3,5] West Bengal[1,4] and Jammu and Kashmir.[2] In all these cases, emphasis has been placed only on "the total alkaloids" irrespective of their nature, whereas the alkaloids needed in medicine are only ergotamine and ergometrine, and the pharmaceutical industry needs large-scale production of sclerotia from only those strains of *C. purpurea* which can produce ergotamine and ergometrine.

In order to select a suitable strain of *C. purpurea* capable of producing significant amounts of ergotamine, several strains of fungus were obtained from East Germany and Czechoslovakia. Nine different strains were tried at the experimental farm at Regional Research Laboratory. The Ootakmond variety of Rye was used as host plant. The crop was planted in the first week of October and the inoculation was carried by spraying a heavy spore suspension of the different strains obtained from the cultures of the fungus on sterilized rye grains. Twelve such sprayings were applied on alternate days. The sclerotia were picked in last week of April and dried at 50° C. Only one strain (R-55) was found promising giving an appreciable yield of ergot. This strain along with another ergotamine-rich strain obtained from East Germany (R-56) was multiplied in isolated plots in an area of 1/20th of an acre. The existing American (R-38) was used as control. The sclerotia obtained from these three strains were chemically analysed for the presence of ergotamine and ergometrine and the results obtained are given in Table I. The two European strains (R-55 and R-56) appear to be very rich in ergotamine. In addition they also contain higher amounts of total alkaloids as compared to the B.P. standard (0·20%). Both these strains also yield crude ergot in quantities which can be economically exploited. These results indicate that it is possible to cultivate economically strains of ergot for the isolation of ergotamine required for therapeutic uses in the country. Pilot scale trials for testing yield of best strains in large-scale cultures were carried out in 1965–66. The strain R-56 has given an average yield of 29·2 kg. per acre when tried on an area of 4·5 acres. It has been also found that this yield could be improved very much by using needle injection method for inoculation.

TABLE I

Yield and alkaloid content of the sclerotia produced by three different strains of Claviceps purpurea *in Jammu*

Sl. No.	Strain number	Yield of sclerotia per acre in pilot scale experiment	Total alkaloid %	Ergometrine %	Ergotamine %
1	R-55	42·3 Kg.	0·21	0·02	0·14
2	R-56	27·0 ,,	0·37	0·02	0·27
3	R-38	22·5 ,,	0·16	trace	0·04

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