

FIG. 1

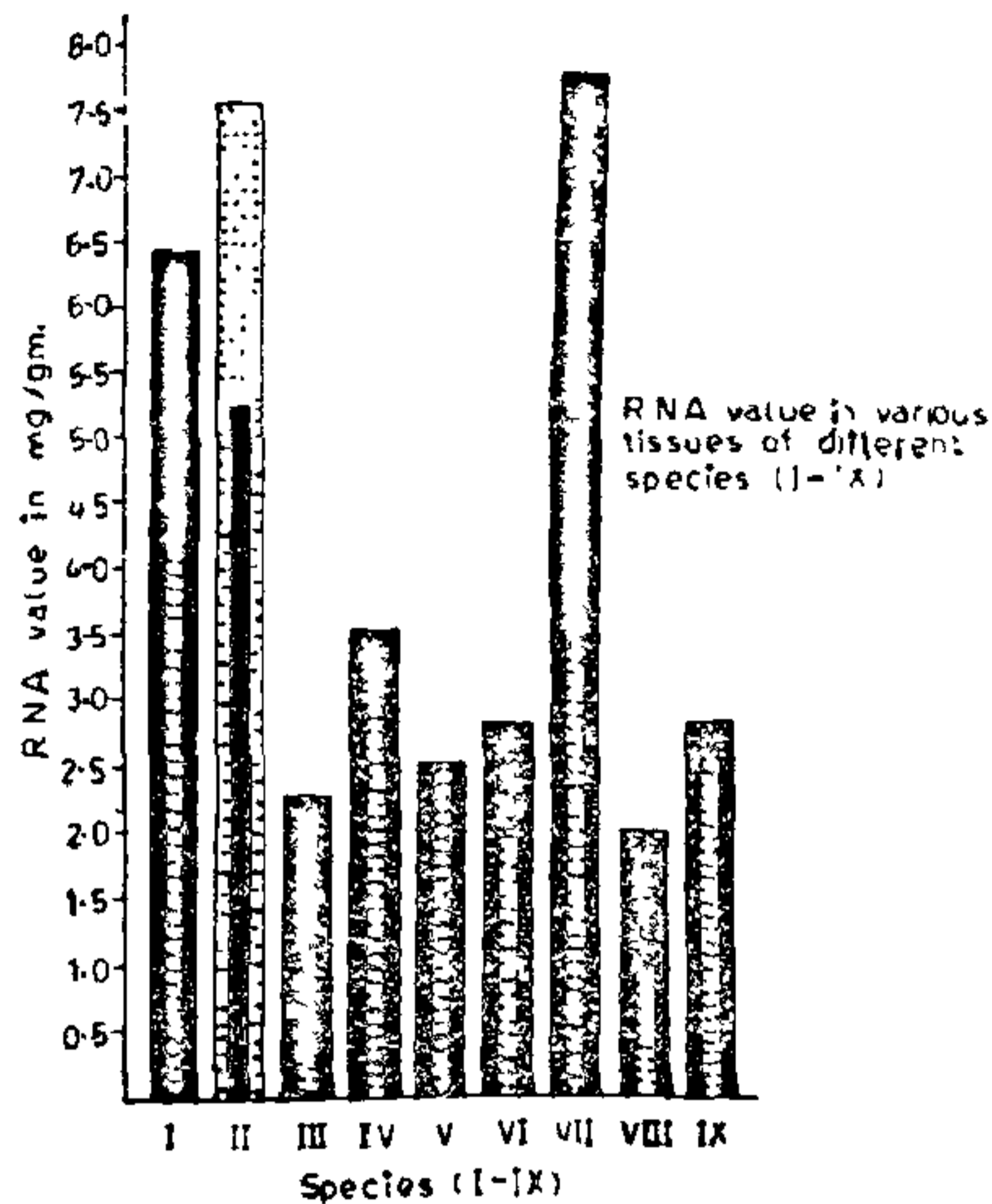


FIG. 2

FIGS. 1-2. DNA, RNA values in different species (I-IX) of bats.

Species: I—*Cynopterus sphinx sphinx*; II—*Rousettus leschenaulti*; III—*Rhinopoma microphyllum kinneari*; IV—*Rhinopoma hardwickei hardwickei*; V—*Taphozous nudiventris kachensis*; VI—*Taphozous perforatus perforatus*; VII—*Megaderma lyra lyra*; VIII—*Hipposideros fulvus pallisidus*; IX—*Scotophilus heathi heathi*.

and *Scotophilus heathi heathi* each with 36 chromosomes in their diploid sets possess different amount of DNA and RNA. This is also true for *Rhinopoma microphyllum kinneari* and *Taphozous perforatus perforatus* having diploid number of 42 chromosomes. The studies thus suggest that the amount of DNA and RNA in a tissue of a species forms a distinctive and a characteristic parameter for differentiating the species having the same number of chromosomes in their diploid sets.

The present findings also reveal that except for *Rousettus leschenaulti*, *Rhinopoma microphyllum* and *Scotophilus heathi heathi*, the DNA values in the rest of the species are nearly constant in the two tissues dealt with. This, however, does not hold true for the RNA values which vary not only in the two tissues of the same species but also in a specific tissue of different species.

The authors are grateful to Prof. G. P. Sharma and Dr. H. S. Vasisth for providing laboratory facilities.  
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May 5, 1978.

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#### ISOLATION OF *CORYNEBACTERIUM PYOGENES* FROM AN ABORTED EQUINE FOETUS

THE bacterium *Corynebacterium pyogenes*, first described by Lucet in 1893 from suppurative lesions in cattle, is widespread amongst domestic animals affecting cattle, sheep, goats and pigs. The common disease conditions caused by this organism are suppurative pneumonia, suppurative arthritis and other

such conditions including mastitis. Occasionally *C. pyogenes* has also been isolated from the throats of human patients suffering from scarlatiniform rash. This organism is considered as probably the most important and widespread of the coryneform group associated with animal disease<sup>8</sup>.

Infectious abortions amongst equines are associated with viruses<sup>3</sup>, fungi<sup>5</sup> and bacteria like *Mycoplasma*<sup>6</sup>, *Leptospira*<sup>4</sup>, *Salmonella*, *Klebsiella*, *Pseudomonas*, *E. coli*, haemolytic streptococci, *Clostridia* and *Actinobacillus equuli*. Although *Corynebacteria* other than *C. pyogenes* have been incriminated in the causation of purulent pneumonia, ulcerative lymphangitis, internal abscess formation and pleurisy in foals, the involvement of *C. pyogenes* in the uterine infection of the mare is of questionable importance<sup>1</sup>. There is only one report of metritis in the mare due to *C. pyogenes*<sup>9</sup>. Perusal of available literature does not reveal the isolation of *C. pyogenes* from aborted equine foetuses. Therefore, this report is to document its isolation from an aborted equine foetus.

An equine foetus aborted around 8th month of gestation, was received in this laboratory for bacteriological examination. The aborted mare, a thoroughbred, had had four previous normal pregnancies. No gross abnormalities could be observed although the placenta appeared thickened. Heart blood, stomach contents and material from the liver of the foetus were collected aseptically and cultured on blood agar plates (7% ox blood) and Robertson cooked meat medium. The agar plates were incubated under 10% CO<sub>2</sub> tension in an anaerobic jar (Gallen Kemp, U.K.). The inoculated media were incubated at 37°C for 48 h prior to examination.

Examination at 48 h post inoculation did not reveal any growth in Robertson cooked meat medium. Blood agar plates showed large number of small glistening bacterial colonies surrounded by a zone of beta type of haemolysis. The organisms were Gram positive bacilli. Metachromatic granules were observed in about 50% of the cells when stained with Neisser's method. The isolate was non-motile and noncapsulated. It was catalase negative. M.R. and V.P. tests were negative. It did not reduce nitrates. Indol was not produced. Gelatin was liquified. Litmus milk was clotted and on further incubation, the clot was digested. Acid, but no gas, was produced from glucose, galactose, lactose, maltose, xylose, and fructose. It did not ferment arabinose, dulcitol, inositol, raffinose and trehalose. In general, the isolate conformed to the tests for *Corynebacterium pyogenes* as described by Cummins<sup>2</sup>.

*C. pyogenes*, although common in other domestic animals, has not been found to play any significant pathogenic role in the equines as evident from the lack of information in this regard. It would be

interesting to understand as to why *C. pyogenes* infections are infrequent in the equines. It would also be worthwhile to conduct immunological studies of this organism in the equines as these might reveal some interesting findings. The report of Zaki and Farrag<sup>9</sup> is the lone report of metritis in mares due to *C. pyogenes* and Bain<sup>1</sup> doubts any pathogenic role of this organism in equines. As already mentioned, there is no record of the isolation of *C. pyogenes* from aborted equine foetus. Therefore, this report is probably the first of its kind.

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#### SUCCESSFUL GRAFT CULTURE OF TOMATO IN BACTERIAL WILT SICK SOILS

BACTERIAL wilt of tomato caused by *Pseudomonas solanacearum* E. F. Smith, is a major limiting factor for its successful cultivation in India<sup>1</sup>. Chemical control measures have proved to be either unsuccessful or uneconomical Rao (*et al.*)<sup>2</sup>. Out of 23 lines marked for resistance or tolerance to bacterial wilt, only one line CRA-66-Sc1-A, was found resistant when screened at this Institute<sup>3</sup>. This line is indeterminate in growth habit, bearing green-shouldered small fruits and thus cannot be used commercially. Till such time a resistant commercial variety is bred, grafting of a susceptible cultivar on to resistant root-stocks has been investigated by the present authors.

In the present study, bacterial wilt resistant lines of tomato (CRA 66-Sc1 A) and Brinjal (Dingra's Multiple Purple) (Rao *et al.*)<sup>3,4</sup>, were used as root-