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AN EVALUATION OF THE ANTIBACTERIAL AND DIURETIC ACTIVITY
OF SOME MEDICINAL PLANTS.

BY

THURAIAYAH VINAYAGAMOORTHY B.Sc. Sri Lanka,
Department of Botany, University of Sri Lanka
Peradeniya Campus, Peradeniya,
SRI LANKA.

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SUMMARY

A study was made of the antibacterial and diuretic properties of some medicinal plants and ayurvedic drugs.

42 plants belonging to different families prescribed in ayurvedic and folk medicine for (a) urinary diseases and (b) cuts and wounds were tested for antibacterial activity against three of the common urinary tract pathogens, namely Pseudomonas pyocyanea, E.coli and Klebsiella oxytocolum, and two wound pathogens (Staphylococcus aureus and Streptococcus pyogenes), by both the Impregnated Paper Disc Method and the Incorporation Method. The mode of selection of the plant materials and the methods employed are discussed.

Of the 42 plants studied, 10 failed to exhibit antibacterial activity while the rest inhibited the growth of at least one of the test organisms. Among the active ones 11 plants were found to be active only against the Gram positive test organisms, whereas the rest were active against both the Gram positive and Gram negative test organisms.

A preliminary chemical separation was done on 9 of the active plant materials with different solvents and the different fractions were tested for antibacterial activity. The results indicate that the activity was not confined to any particular fraction and that some fractions showed greater activity than the crude extract. The

activity of these plant extracts was also compared with that of the corresponding standard antibiotics.

These findings indicate that the activity was not restricted to any particular organs, family, or concentration of the plant extract involved.

13 plant decoctions and 4 ayurvedic drugs prescribed as diuretics were tested on human subjects. The urine collection was analysed in respect of volume and sodium, potassium and chloride content. A critical review of the clinical trial was discussed. The urinary excretion model was established for the test animal (man), the results were statistically analysed on the basis of this model with a computer as to the mean difference in each parameter, the correlation matrix of the urinary constituents, and the multiple regression analysis.

Five of the plant decoctions and 3 of the ayurvedic drugs exhibited diuretic activity. Investigation reveals that certain plant decoctions and ayurvedic drugs increased the volume out-put only, while others produced saluresis only. Further, the correlation matrix indicates that there was a change in the urine composition with the administration of the test materials. The efficacy of these active materials was compared with that of a standard diuretic.