The actinomycetes, as a group of microorganisms, have attracted much attention on two accounts; firstly they represent a group of boundary microorganisms between the bacteria and the fungi, and secondly they are of immense applied value to man in his modern civilization.

The discovery of fact that they are antibiotic producers led to a vast search for them throughout the world. Each of the isolated member was intensively investigated for its antibiotic potential and other useful activities. Besides the capacity for antibiotics, the actinomycetous organisms exhibited production of certain useful hydrolytic enzymes such as the proteases and amylases. On this account also they have been intensively studied.
As a group of microorganisms they occur widely in soils and other habitats where they perform saprophytic activities, by effecting biodegradation of organic waste matter, to have a role in the natural cycle of matter. They have acquired an elastic adaptability to environment, specially for temperature. Basically poikilothermic, they exhibit distinctive thermophilism and mesophilism - which as a biological attribute has been sufficiently studied fundamentally, upto the molecular levels of structure and function, in them.

It is quite interesting to find that at the organismal level this group constitutes boundary organisms and pose a challenge to solve their taxonomic status. The myceloid nature of their colonies, branching, and manner of sporulation were considered characteristics akin to fungi, and the entire group was recognised as a class of fungi, originally. Later, the studies detailing the size of their thallus, and staining properties exhibited notable differences from fungi and presented evidence of their larger similarities with the bacteria. Still other properties of actinomycetes seemed to warrant their consideration as a transition group between the bacteria and the fungi.
Recent evidences point definitely to the fact that the actinomycetes are more closely related to the bacteria. The prokaryotic cellular organisation, absence of septa, their proneness to attack by phages, absence of chitin and lack of cellulose in their cell substance, and sensitivity to antibacterial antibiotics and acid reaction of the medium are very strong characteristics to consider them as true bacteria. In this respect, Avery and Black (1954) concluded that "from the chemical point of view Actinomycetales have nothing in common with the true fungi, but rather with the bacteria". Cummins and Harris (1958) went even further by suggesting that the order Actinomycetales be abolished altogether and that the families of the actinomycetes be included in the Eubacteriales. Modern trend is to acknowledge Actinomycetes as bacteria, and in The Bergey's Manual of Determinative Bacteriology (7th and 8th Editions) these have been included as the order Actinomycetales of bacteria.

The genus **Streptomyces** Waksman and Henrici is the largest of the genera of Actinomycetes in distribution as well as in its speciation. At one time, it was believed that the **Streptomyces** represent a distinct group taxonomically. A separate class **streptomycetes** was thus recognised. Numerous investigations made under the International Streptomyces
Project (ISP), in which seventy four actinomycetologists collaborated for six years from 1964 to 1970, provided knowledge and data for inclusion of the *Streptomyces* in Actinomycetales. Through the ISP and the contributions of Shirling and Gottlieb (1966, 1972, 1976), Pridham (1976), Kurylowicz et al. (1976), and Pridham and Tresner (1977) criteria were laid for delimiting species of the *Streptomyces* which number to 463 according to the type descriptions given in The Bergey's Manual of Determinative Bacteriology (8th Edition, 1977). Besides the recognised species, a good number of type strains have also been mentioned in the manual.

The foregoing discussion, therefore, makes it explicit that the Actinomycetes — particularly the *Streptomyces* — possess great biological and applied importance. The present investigation was undertaken to obtain organisms of this group occurring in this region and to evaluate their taxonomy and biology, as the first ever study from here.

During the course of these investigations, thirty-one distinct species and thirteen type-strains of *Streptomyces* were obtained and described. These have also been investigated for their capacities to produce exo-enzymes, antibiotics, thermo-tolerance, and antibiotic sensitivity. An attempt has been made to delimit strain differentiation among the multi-isolate species.