VIII. PARASITES AS PLANT TAXONOMISTS

Prof. J.A. Nannfeldt gave in a lecture (publ. in Acta Univ. Skrifter rörande Uppsala Univ. 17, 1970) an interesting summary of Fungi as plant taxonomists, distinguishing 4 cases: 1) isolated fungus restricted to one species, not on other related species, 2) an isolated single fungus on a supraspecific taxon of hosts, 3) closely related fungi on closely related species of hosts, 4) parasite genera or higher taxa confined to a special super-generic host taxon. All cases he illustrated by examples. In certain cases there must have been 'co-evolution' of parasite and host.

He mentioned that the importance of parasitic fungi as indicators of taxonomic affinity has been utilized in the past. Samuelsson used it in 1913 for example to suggest affinity of Empetrum with Ericaceae. One could say that this means of getting independent data is an argument of chemotaxonomical nature, the 'taste' of the parasite for certain substances which he needs, likes or is bound to in some other way. Prof. Nannfeldt, besides pointing to Empetrum, added that we must now seriously consider the possibility, or rather probability, of a kinship between Acorus and Sparganiaceae after the surprising discovery of Parmelee & Savile who found that Uromyces sparganii also infests Acorus calamus (1954).

Dr. L. Holm (Nytt Magasin for Botanik 16, 1969, 147-150) used rusts for tracing some affinities. He made some suggestions on the tribal affinity of two grass genera, namely Molinia and Spartina. Furthermore, Holm discussed rusts on Salicaceae, a family of which the affinity is sought with Flacourtiaceae, notably Idesineae (as accepted by Takhtajan, 1959), Hamamelidales (Hutchinson, 1959), Amentiferae (Helmqvist, 1948), while Melchior (1964) finds their affinity obscure. Holm said that the uredinological compass points to Flacourtiaceae.

Of course, 'parasite-taxonomical characters' will behave in a similar non-absolute way as other taxonomical characters, as chemo-taxonomical (serological) features in particular. In many, or at least in an appreciable number of cases they represent essential evidence, but analogies and random irrelevancies will also occur. As far as parasitic Phanerogams are concerned all such cases are for example represented in Loranthaceous parasites, e.g. Viscum liquidambaricolum parasites in Taiwan on Liquidambar and in Java on Altingia; Korthalsella dacrydii on Dacrydium & Podocarpus. And also Rafflesia & Rhizanthes only on various genera of Vitaceae. But most Loranthaceae are unspecialized, to various degree.

A similar, experimentally achieved parasitism or symbiosis is of course grafting. On the strength of pollen

characters Cactaceae were affiliated with Centrospermae. The family Didiereaceae, peculiar to Madagascar, is palynologically also similar to Centrospermae. Both families are succulents. Though they are certainly not closely related, Erdtman (Handb. Palynology, 1969, 89) communicates that didiereaceous plants have at Heidelberg successfully been grafted on Cactus stocks.

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