Obviously we have here a borderline case of taxonomic interpretation difficult to treat with binary nomenclature. On the other hand, a strict application of binary nomenclature would produce conflicts for practical students of wood ants:

(i) To speak only of *Formica rufa* would ignore the fact that we have entities with very different biological parameters and that the designation of these entities is highly desired in the context of ecological studies and wood ant protection and

(ii) to make up three good species would ignore all what was reported in this paper.

Thus it seems the most appropriate taxonomic treatment to regard **pht R** and **pht P** as relatively stable sympatric subspecies or ecological races of *Formica rufa* with the taxonomic designation *Formica rufa rufa* Linnaeus 1761 **(pht R)** and *Formica rufa polyctena* Förster, 1850 **(pht P).** As taxonomic designation for the hybrid **pht I,** I propose *F. r. rufa* x *polyctena.*

As a consequence, I plead for the moderate and cautious(!) reintroduction of sympatric subspecies concepts if there is enough evidence to justify such an interpretation as in the presented case. This must not mean a return to the destructive FOREL concept to name arbitrarily hybrids and to produce a great number of subspecific and infrasubspecific names.

Sympatric and parapatric speciation have very likely a great importance in speciation of insects, a sympatric speciation particularly in the parasitic species groups (ZWÖLFER & BUSH 1984, ENDLER 1977). For non-parasitic species a complete sympatric speciation is not probable but at least a trend to divergence is expected under certain conditions. The wood ants considered here are in part non-parasitic (those which spread by colony fission) and in part temporary parasites (those founding new colonies as single queens). A trend for segregation into the sympatric subspecies *F.r. rufa* and *F. r. polyctena* can be predicted if we postulate a model of two genes the first of which determines the mating place and the second modifies the action of the first and determines the mode of colony foundation. The model makes following basic assumptions:

(i) We have a large compact woodland with low ratio of margin line length against area.

(ii) *Serviformica* nests as host nests for socialparasitic colony foundation are abundant at the margins but very rare inside the woodland.

(iii) The first gene with dominant allel **A** and recessive allel **a** directs the mating place orientation with genotypes meaning

AA and **Aa**: long-range mating flight towards margin structures

aa: mating near the nest, no longe-range flight to margin

(iv) The second gene with dominant allel **B** and recessive allel **b** modifies the action of the first gene and directs the mode of colony foundation with genotypes meaning

BB and **Bb**: high potency for socialparasitic colony foundation, no inhibition of long-range mating flight (**aA** and **Aa**)

bb: very low potency for socialparasitic colony foundation, colony foundation by nest-splitting, inhibition of long-range mating flight (**AA** and **Aa**)

As best coadaption for the inner woodland area is predicted genotype **aabb** which could be represented by **pht PP** (or the typical *polyctena)* and as best coadaptions for the margin lines genotypes **AABB, AaBB, AABb** and **AaBb** which could be represented by **pht RM** (or monogyneous *rufa*). The genotypes **aaBB, aaBb, Aabb,** and **AAbb** would have a reduced fitness inside the woodland and on the margin as well and should be counterselected.

Such a model can not explain a complete segregation of genotypes since a certain gene flow between the inner woodland and margin population is always given. However, a clear trend to increase the frequency of the best coadapted homozygous combinations **aabb** for the inner woodland and **AABB** for the margin habitat is predicted in case of large compact woodland systems where the probability for contacts of both genotypes is lower. In such areas, *F. r. rufa* and *F. r. polyctena* appear as rather well separated sympatric subspecies the more we have here a higher probability for allochronic nuptial flights.