have been important because the water in these impoundments is deeply stained by
decaying organic material and the mergansers may have required rather shallow water
to find their food.

When seen on Knowles Unit Three on 5 June, the brood still contained seven
ducklings. It consisted of six ducklings when last seen on 10 June. On 29 June, two
of the young, both males, were caught in a bait trap. They were then within about
three days of flying, indicating that flying age is reached in about 71 days. Hochbaum
(op. cit.: 108) found most puddle ducks (Mallard, Gadwall, Baldpate, Pintail, Shoveler)
fly in from 38 to 63 days, while diving ducks (Redhead, Canvasback, Lesser Scaup,
White-winged Scoter) required 63 to 77 days. It appears that flight age for Hooded
Mergansers is attained later than in most puddle ducks and about the same as in
most divers.—Frank B. McGilvery, Bureau of Sport Fisheries and Wildlife, Patuxent
Wildlife Research Center, Laurel, Maryland.

Competitive exclusion and birds at fruiting trees in western Colombia.— During an hour or two of observations from 20 to 22 March 1962, I observed 28
species of birds feeding on the small, blue berries of Conostegia sp., affinities with
icosandra (Melastomaceae). These small trees produce abundant fruit and are
common on the steep slopes at 4,500 feet elevation by the Cali-Buenaventura road
below Queremal (3°32' N lat., 76°43' W long.), Valle, Colombia. The species ob-
served were: pigeons, Columba fasciata; barbets, Capito bourcierii; woodpeckers,
Piculus rubiginosus; manakins, Allocotropterus deliciosus; tyrant flycatchers, Tyrannus
melancholicus, Elaenia flavogaster, Elaenia sp. (obscura?); thrushes, Turdus ignobilis,
Myadestes ralloides; wood warblers, Vernivora peregrina; honeycreepers, Coereba
flaveola, Chlorophanes spiza; tanagers, Chlorophonia cyanea, Pipraeidea melanotata,
Tangara arthus, T. icterocephala, T. parzudaki, T. labradorides, T. cyanicollis, T.
gryola, T. ruficapilla, T. nigroviridis, T. heinei, Thraupis virgens, T. palmarum, Ram-
phocelus icteronotus, Habia cristata; finches, Saltator atripennis.

It has been shown in several recent accounts that flowering and fruiting trees
and other sources of food, such as swarms of termites, attract many species of birds.
Miguel Alvarez del Toro (Miscelanea Ornithologica, 1963; pp. 3–5) lists 69 species
which visit the flowers of Combretum farinosum in Chiapas, México. E. Eisenmann
(Auk, 78: 636–638, 1961) lists 13 species eating catkins of Cecropia mexicana and 17
species at swarms of termites in the Panamá Canal Zone. H. Land (Wilson Bull.,
75: 199–200, 1963) reports 20 species feeding on fruits of another melastome tree
(Micromia triervera) in eastern Guatemala.

The observations at Queremal are noteworthy mainly because so many species of
one genus, Tangara, fed on the berries. In all, 9 species, or 10 if the possibly con-
generic Pipraeidea melanotata is included, fed on the berries in the brief time of
my observation.

In addition to these 10 species, 2 species of the related genus Chlorochrysa and 7
other species of Tangara (larvata, johannae, palmeri, ruficervix, rufigula, xanthocephala,
florida) were encountered at or below Queremal on the western slopes of the Andes.
These small and spectacularly beautiful tanagers differ widely in coloration but have
similar foraging habits and are similar morphologically in such features as bill size
and body size. Pairs or small groups readily join other birds feeding in fruiting
trees. They also wander or join wandering mixed flocks searching for insects;
commonly these small tanagers peer underneath limbs in the fashion of Black-and-
white Warblers (Mniotilta varia), or pick small prey off nearby leaves. The foraging
behavior and interspecific interactions of these 19 related species are worthy of inten-
sive study.
Near Queremal the species observed in the melastome trees occupy different habitats to some extent. *Tangara parzudakii* is a species of mossy limbs in the crowns of trees in the cloud forests at 4,500 to 9,700 feet elevation. *T. icterocephala* favors the edges of second growth between 1,600 and 4,500 feet elevation, and *T. gyrola* is commonest in the treetops at similar elevations. Of species centering at the elevation of Queremal, *Pipraeidea melanomota* is commonest in bushy pastures in wet regions while *Tangara ruficapilla* is most frequent in bushy pastures in dry or overgrazed areas. *T. labradorides* is most common in the lower levels of second growth, while *T. arthus* favors the edges of second growth and *T. nigroviridis* the forest edge and crown. *T. heinei* and *T. cyanicollis* favor isolated trees and the edges of groves and second growth. However, the species overlap in their habitats, and move into each others' zones to some extent when a good source of food is available.

Do these species contravene the “competitive exclusion principle,” that a species tends to exclude others from its own niche? Probably in these cases fruit is abundant only briefly and in such a quantity that no one species would gain by expending energy to exclude others. The normal habitats may be restricted by the insect portion of these birds' diets. There seems to be no competition, and hence no exclusion, when fruit is superabundant.

It is possible that most foods are like the berries of *Conostegia* in that they are eaten by more than one species and occur irregularly. Food, then, would usually be superabundant when and where it does occur. If most foods are superabundant, the usual statements that superabundant foods are not to be considered in applying the competitive exclusion principle result in a rather extreme restriction of the principle. It may be better to include superabundant foods by stating the principle as an evolutionary tendency which is often held in abeyance or opposed by an “irregularity principle”: that is, biological or physical fluctuations create niches which can temporarily be exploited by more than one species, since full exploitation of a niche always lags behind the appearance of the niche. Various species, such as the tanagers at Queremal, may be well suited for exploiting a succession of irregular food supplies. What factors keep the species in somewhat separate habitats but allow them to overlap at Queremal may become evident if the species are studied carefully.

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