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Bibliography of *Apis florea**

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Abstract – This bibliography of the literature on *Apis florea* Fabricius was compiled from 791 references, written by 774 authors and published in 212 different periodicals, conference proceedings, theses, reports, books and patents covering the period 1787–2004. The literature shows greater strength in the applied aspects of beekeeping than in basic biology. Growth of the literature on *A. florea* has been exponential over the past five decades.

COMMENTARY

Of an estimated 100 000 publications on *Apis*, about 4 000 titles of the literature concern the Asian honeybee species. *Apis florea* Fabricius 1787 was first described over 200 years ago and it is somewhat surprising that the publications on this species represent only 20% of that for the Asian species and less than 1% of the total *Apis* literature. Nonetheless, the Asian species of honeybees are often significant commercial and biological factors in the regions where they occur. That over 90% of all publications on this species have appeared in the last fifty years attests to the growing interest in *A. florea*. Accessing this small but rich heritage is difficult because most publications have not been captured by any website or computer search engines. Hopefully, this bibliography may serve to: (1) provide access to historically important publications on *A. florea*, (2) indicate the relative need for further investigations on *A. florea*, (3) provide an information base for honeybee biologists and developmental agencies, and (4) encourage honeybee scientists to translate at least the titles of the relevant literature into English as the scientific lingua franca of the day. It is difficult to draw many hard conclusions about human demography and publications on *A. florea*, but, numerically, the literature is dominated by works from India (57% of publications), Thailand (13%) and China, Iran, Sri Lanka (5% each).

The directions in research on *A. florea* to date clearly demonstrate a predominant interest in general beekeeping matters (bee botany, foraging and honey). The literature on basic biology reflects trends in the western literature in which behaviour, distribution, classification, physiology and reproduction have long been studied while the more recent disciplines like population biology, genetics, and pheromones lag behind. The references also demonstrate that there are many unanswered questions concerning enzyme polymorphism, population biology and climatology. Given the widespread occurrence of absconding and migration in *A. florea,* it is perhaps surprising that these phenomena have not been investigated more intensively

A. florea has an enormous area of distribution, some 9 M km^2. It seems to be particularly suitable for survival in urban areas and exhibits an invasive potential as it has become established as an exotic in Sudan, Indonesia and Saudi Arabia and possibly also in Iraq. Moreover, a Genetic Algorithm for Rule-Set Prediction

* References are available online at http://www.edpsciences.org/apido.

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analysis suggests that an additional 10 M km^2 of Africa offers suitable climatic conditions for this species (Diniz-Filho, pers. comm.). This potential invasiveness could well be assisted by the fact that *A. florea* does not compete with *A. mellifera* in Sudan where the two species occupy different niches (Mogga, 1994; El Shafie et al., 2002). Thus there is also a certain timeliness for organizing the literature on this species.

The bibliography was prepared by obtaining all references to Asian honeybees published in Apicultural Abstracts (1950–2004), Zoological Record (1864–2003) as well as the *florea*-specific bibliographies of Droege (1962), Crane (1967, 1978, 1993), Morse (1970) and Joshi (1995,1996). Subsequently, copies of the original publications were obtained and the references cited in these works were traced in continuous iterations into the past until no new references were found. Each reference was entered in a computer database and keywords for subject matter and countries for all publications were noted. On completion of the database the original 254 keywords were compressed into 49 more inclusive keyword categories and these appear in the actual bibliography. The unalphabetized keywords appear at the end of each entry and are arranged in order of relative importance in the article. Finally, references obtained through the iterative searches to older sources that lack full bibliographic details are indicated with an asterisk and the end of the entry.

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Résumé – Bibliographie d'*Apis florea*. Cette bibliographie de la littérature consacrée à *Apis florea* a été compilée à partir de 791 travaux écrits par 774 auteurs sur la période 1787–2004. Les travaux ont été publiés dans 212 périodiques différents, dans des comptes-rendus de conférence, des thèses, des rapports, des livres et des brevets. Les aspects appliqués de l'apiculture sont nettement plus développés que la recherche concernant la biologie de l'insecte.
La littérature augmente de façon exponentielle depuis les 50 dernières années.

Zusammenfassung – Bibliographie über *Apis florea*. Diese Bibliographie über *A. florea* wurde aus 791 Literaturangaben von 774 Autoren zusammengestellt. Sie wurden in 212 verschiedenen Zeitschriften, Konferenzen, Verhandlungen, Examensarbeiten, Berichten, Büchern und Patenten in einer Zeitspanne von 1787–2004 veröffentlicht. Die Literatur zeigt eine stärkere Tendenz zu angewandten Aspekten der Bienenhaltung als zur Erforschung der Biologie. Die Zahl der Veröffentlichungen über *A. florea* ist in den letzten 50 Jahren exponential angestiegen.