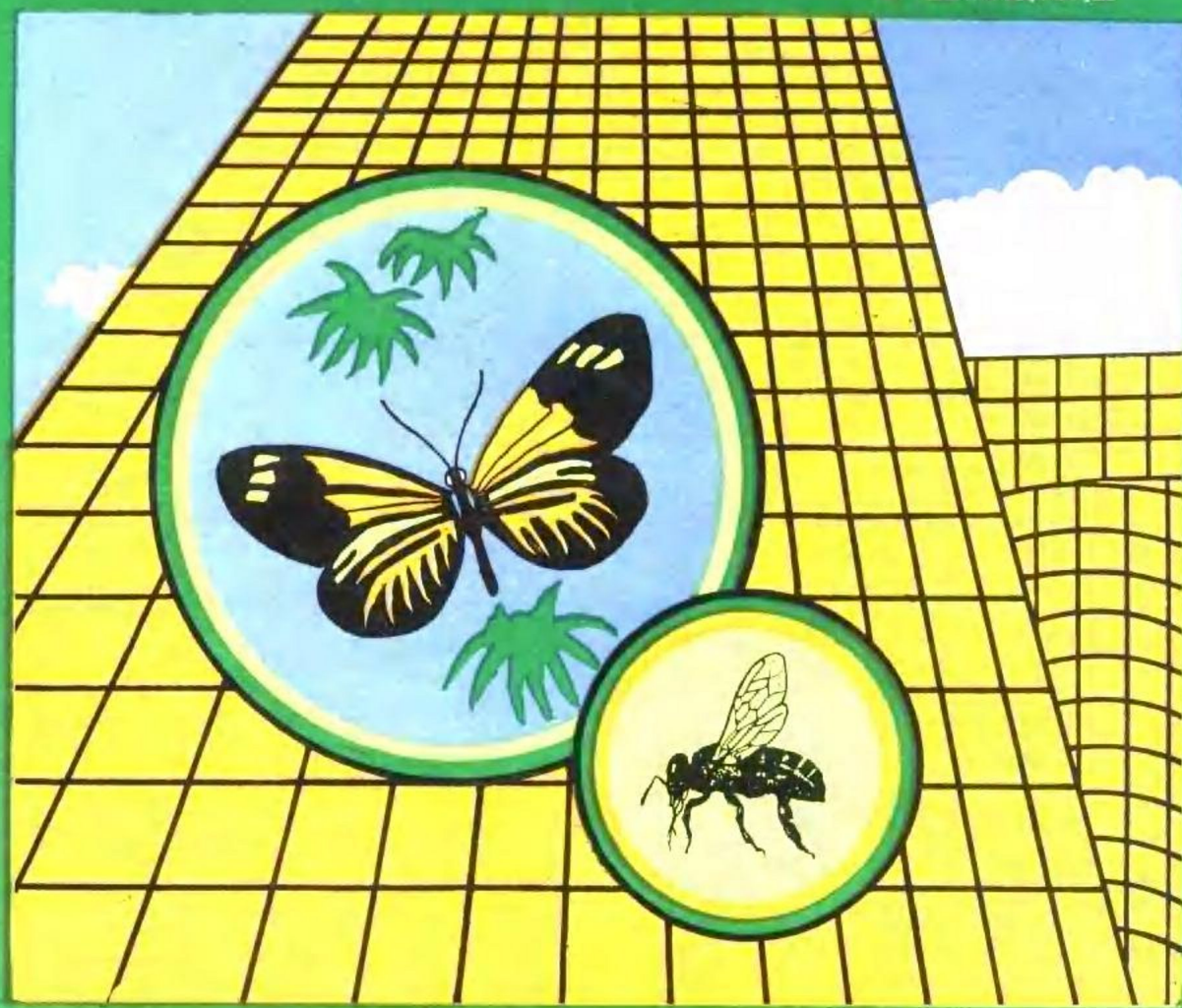


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内 容 提 要

本书是我国第一部城市昆虫学专著，由中国昆虫学会城市昆虫专业委员会的9名专家执笔著成。它结合中国城市化的历史、发展、类型和现状等特点与中国城市昆虫发生的具体情况，分9章讨论了城市昆虫的治理策略与利用前景，介绍了各专家的学术观点和研究成果，旨在抛砖引玉，为城市昆虫学这门新学科在我国的发展奠定基础。资料翔实，内容丰富、新颖，有较高的参考价值。可供昆虫学、城市科学、环境保护科学工作者，城市工商业部门、城市建设部门、城市绿化部门、城市防疫部门、城市档案、图书、文物馆藏部门技术人员以及高等院校有关专业师生阅读与应用。

前 言

城市昆虫学同其他生物科学进入城市科学的领域一样,是在本世纪70年代兴起的一门城市新学科。10多年来在西方发达国家,正在受到重视,发展迅速,不少大学已经开设课程,培养城市昆虫学的专门人才。

1987年7月我国在武汉市举行的中国昆虫学会大会上介绍并讨论了城市昆虫学的重要性,引起了来自全国与会者的注意,并决议在中国昆虫学会增设城市昆虫专业委员会,以推动我国城市昆虫学的发展。1988年10月在重庆市举行了第一次全国城市昆虫学学术讨论会,收到论文82篇,并决议由城市昆虫专业委员会组织会员撰写一本具有中国特色的《城市昆虫学》,以利于向国内宣传这门新学科并促进城市昆虫学的教学与科研工作在我国地开展。1990年6月在南京市举行了第二次全国城市昆虫学学术讨论会,收到论文175篇,讨论了城市昆虫学学科的性质与内涵,交流了近年来国内城市昆虫科研成就与工作经验,已有几所高等院校准备开设城市昆虫学课程,并开始了教材建设的工作。这几次会议为本书的编写工作提供了重要的信息、素材和良好的基础。

我国自改革、开放以来,全国范围内城市化的进程迅猛发展,与之相适应的各门类的城市科学都在迅速兴起,在城市生物科学中涉及范围最广的城市昆虫学理应得到相应的重视和加速发展。鉴于中国城市化的历史、城市化的基础、城市化的类型和城市化的现状,都和西方发达国家有很大差异,西方城市昆虫学的内容很多不能搬用,因此,我们认为,必须结合中国的实际建立中国的城市昆虫学科;同时还应当看到,过去中国城市昆虫学的理论与实际、经验与资料都十分贫乏,需要集各方面的智慧和力量,逐步充实完善,这在一门新学科建立伊始,也是必经的过程。

作为首次尝试《城市昆虫学》的撰写工作,无成规可循,因此在本书分工和成稿过程中,既尽可能各就专业所长,分别撰写有关各专题;并且不强求统一观点,各章自成体系,各抒己见,以利于学术争鸣和学科的发展。本书的性质不属于一般城市害虫的教学用书,着重阐述我国城市昆虫在城市化进程中与城市环境的相互关系和特点,对今后城市化发展中城市昆虫的发生、治理与利用作了展望。对于一般城市害虫书籍中已有较详细叙述的各类城市昆虫的形态描述和生活史习性等,本书仅作扼要介绍,以供必要的参考。

本书的内容很多是执笔者多年来的工作经验和第一手资料,惟“蜚蠊和蚂蚁”一章,因

难于归入传病医学昆虫或仓储馆藏居室害虫，过去国内的系统研究资料又较少，故主要根据蜚蠊目专家吴福桢教授和蚁科专家唐觉教授的研究成果，并参阅其他一些资料，作一综述，独立一章，列于篇末。有关蜚蠊和蚂蚁种类的插图，均可参看有关参考文献中的图版。

本书的分工：前言、绪论、第一、二、九章和结语由西南农业大学教授蒋书楠执笔；第三、四章由中华人民共和国成都植物检疫所高级农艺师张禹安执笔（现在四川省农业管理干部学院工作）；第五章由中华人民共和国国家档案局档案科学技术研究所高级工程师冯惠芬、北京图书馆工程师李景仁执笔；第六章由上海市园林管理局高级工程师王瑞灿执笔，西南农业大学教授封昌远提供部分手稿和资料；第七章由中国人民解放军第三军医大学副教授张军执笔，其中蝇类由冯崇英教授执笔，卫生害虫的防治由涂瀛教授执笔；第八章由广东省昆虫研究所副研究员黄亮文执笔；全书由蒋书楠教授统稿。作为一门新兴学科，本书内容仅仅是一个方面的尝试，旨在抛砖引玉，望今后有更多的同类专书问世，使城市昆虫学这门新学科在我国不断茁壮成长。

蒋书楠

1990年8月于西南农业大学

PREFACE

The progress of urbanization in China is extremely rapid in recent decades. Insect problems in urban area become more prominent and complicate than ever before. In the 4th National Congress of Entomological Society of China the senior author took the opportunity to propose the necessity of developing the new discipline of Urban Entomology in this country. One year later, in the inaugurating general meeting of the Committee of Speciality of Urban Entomology, the authors were trusted to take the task of compiling a treatise on this specific subject in order to promote the development of this new discipline in China. After two years laborious work, this task has been accomplished. As a new discipline, it is quite naturally existing various views and conceptions about the implication and contents of Urban Entomology. The authors inclined to accept the viewpoint that Urban Entomology is a new field of science arisen from the rapid advancement of Urbanology, it is characterized by its interdisciplinary properties and its progress usually keeps pace with the speed of urbanization. Urban Entomology deals mainly with insect problems in relation to urbanization based on Urban Ecology, hence it can be hardly equalized to Urban Insect Pestology. Of course, the contents of Urban Entomology should consist all kinds of urban insect pests, however, a manual or handbook of urban insect pests still could not take the place of Urban Entomology.

As a result of the peculiarity, complexity and variability of the urban ecosystem and also of the secondary ecosystems, the insect fauna in urban area is usually complicate and variable. The mode and speed of urbanization and the degree of modernization serve as decisive factors influencing the alteration of urban ecosystem and composition of insect community. The process of urbanization in China is apparantly different from western countries. Models of urbanization in China may be classified into six types, (1) Small city arisen from

concentration of rural enterprises. This is really Chinese fundamental and unique mode of urbanization. (2) Small city developed to middle-sized city, the municipality under county or provincial jurisdiction, about two hundred such kind of municipalities have been built up in recent ten years. (3) Old large city developed to modernized big municipality. (4) Cities arisen from newly exploited big industrial bases, e.g. mineral or petroleum industries. (5) Cities arisen from new touristic spots or new communication or transportation centers. (6) Modern cities arisen from the development of special economic zones. The former three models are gradual-progressive urbanization, while the latter three models are sudden-rising urbanization. Changes of insect faunal constitution, population density and population predominance, and even of insect bionomics, resistance potential and morphological variation will be different in different models of urbanization. In the first two types, the level of modernization is usually low, problems of insect pests are usually serious, insect fauna is more or less preserving that of agricultural or forestry ecosystems, and insect populations mostly have not yet adapted to urban environment. The third type, indeed, includes both rural and urban environments within a city, insects breeding in the old part of the city have well adapted to the urban environment, such as the atmospheric pollution, traffic dust, city higher microclimate and etc., while insects in the newly extended part of the city have not such adaptation yet. Hence difference in resistance to adverse effect, in duration of life cycles and even in morphological variations may exist between insect populations in the old part of the city from the newly extended part of the same city, and these differences even exist in different populations of the same species. This makes the problems of pest control more complicated. In the second category, the sudden-rising new cities, the (6) type is the most distinguished model of urbanization, and practically this is unique example of urbanization in the world. These new big cities are highly modernized both in urban construction and urban management, but these cities are developed in a short time and reconstructed on a base of very backward village or small town, most of the populations of rural insects lose their proper habitats and disappear from the new modernized urban environment. In solving insect problems, quarantine inspection and hygienic management seem to be more important in these new cities. In the new developing industrial or touristic cities, conditions before and after urban reconstruction are nothing better than those of special economic zones, insect pest problems are generally more

serious and complicated.

The habitat of urban insects can be classified into two categories: (1) Open type, all the out-door living species such as insects of ornamental and side-walk trees, park and garden insects and etc. (2) Closed or semiclosed type, all in-door living insects or intermediate forms, such as stored product insects, household insects, library and museum insects, and most of the hygiene insects, e.g. cockroaches, ants, mosquitoes and flies. In the former case, the response of insects to the adverse impact or favourable conditions of the urban environment is comparatively more direct and effective than in the latter case.

The scope of Urban Entomology not only insect pests is concerned, but also all kinds of exploitable and utilizable insects will be included, such as food stuff insects, forage insects, medicinal and pharmaceutical insects, ornamental insects, cultural insects, environment-monitoring insects, experimental insects and etc. A new exploiting insect-industry will have a broad and bright future in this country.

The core of urban ecosystem is not else but human-being. An important criterion for evaluation of either control or utilization of urban insects is whether it will be doing good to people either on material or on mental benefits. But the attitude of urban citizen is quite diverse regarding to insect pest problems, someone realizes the importance of the work of insect pest control in urban area, while others are ignorant or remain indifferent. Moreover, usually without natural interruptions between each secondary ecosystems within a city, insect pests in alike habitats may be interchangeable. Hence insect pests control in urban area will be more difficult than in the agricultural fields. In most cases, especially in the closed and semi-closed environments, the economic threshold estimation is impracticable for pest control, and then, the integrated pest management (IPM) seems also not adoptable. It is suggested that the holistic pest control (HPC) will perhaps be more preferable.

Many problems of urban insects confronted with us are new and not well-experienced before. Indeed, it is necessary to carry out basic and applied researches on Urban Entomology to meet the rapid developing situation of urbanization in this country.

Chongqing

August 1990

Jiang Shunan

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