

虫媒传染病流行病学 研究进展

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微生物威胁论坛

顾问 刘胜利 王宝麟
主译 吕志平 徐云庆 顾大勇



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内 容 简 介

本书从宏观角度审视了虫媒传染病给全球带来的负担, 讨论了未来能够成功减轻和应对虫媒传染病的策略, 并深入探讨了虫媒传染病的生物学和生态学背景, 虫媒传染病对健康和经济产生的影响, 新发与复发虫媒传染病方面的预防和控制手段、科学与技术上的进步, 以及应对当前和未来威胁的综合策略。全书内容高端、前沿, 观点、理论独到新颖, 对虫媒传染病的预防和控制工作有很好的指导和借鉴意义。

本书可供高等院校特别是各类医学院校生命科学领域的学生、老师、研究人员, 以及疾病预防控制相关工作人员, 如 CDC 和检验检疫以及医院传染病相关医务工作者参考。

This is a translation of *Vector-Borne Diseases: Understanding the Environmental, Human Health, and Ecological Connections, Workshop Summary (Forum on Microbial Threats)* Rapporteurs: Stanley M. Lemon, P. Frederick Sparling, Margaret A. Hamburg, David A. Relman, Eileen R. Choffnes, and Alison Mack, Forum on Microbial Threats © 2008. First published in English by the National Academies Press. All rights reserved. This edition published under agreement with the National Academy of Sciences.

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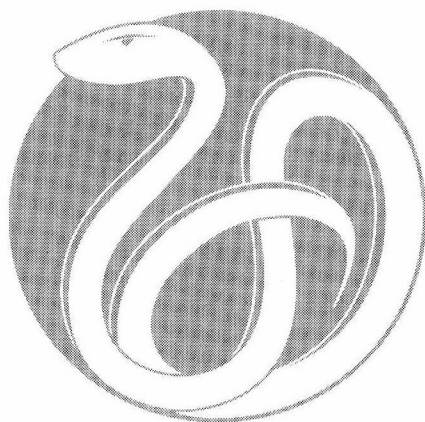
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仅有理论不够，必须实践；
仅有决心不够，必须实干。

——歌德



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This report has been reviewed in draft form by individuals chosen for their diverse perspectives and technical expertise, in accordance with procedures approved by the National Research Council's Report Review Committee. The purpose of this independent review is to provide candid and critical comments that will assist the institution in making its published report as sound as possible and to ensure that the report meets institutional standards for objectivity, evidence, and responsiveness to the study charge. The review comments and draft manuscript remain confidential to protect the integrity of the deliberative process. We wish to thank the following individuals for their review of this report:

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Although the reviewers listed above have provided many constructive comments and suggestions, they were not asked to endorse the final draft of the report before its release. The review of this report was overseen by **Melvin Worth**. Appointed by the National Research Council, he was responsible for making certain that an independent examination of this report was carried out in accordance with institutional procedures and that all review comments were carefully considered. Responsibility for the final content of this report rests entirely with the authoring committee and the institution.

* 本书评审人。

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Stanley M. Lemon, *Chair*
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Forum on Microbial Threats

* 致谢。

中译本序

长久以来,传染病造成患病、死亡的数量一直高于其他因素的总和,而虫媒传染病一直与人类的严重疾病和死亡联系在一起。20 世纪初人们发现蚊子传播疟疾、黄热病、登革热等疾病,于是很快采取措施控制虫媒,包括应用各种环境卫生控制措施及提高整体卫生状况,使得 20 世纪上半叶世界大部分地区从主要虫媒传染病的阴影下暂时得到解脱。然而,这段成功转瞬即逝,个中原因纷繁复杂。过去的 30 年间,由于种种原因,一些已被“消灭”的虫媒传染病大有死灰复燃之势,新型虫媒传染病的全球性暴发和流行也时有发生。今天,虫媒传染病再度引发了全球性的关注,成为人类致病、致死的重要原因。

据统计,超过 2/3 的人类传染病与虫媒有关。世界卫生组织提供的资料表明,目前全球约有 30 亿人生活在直接受到虫媒传染病威胁的国家和地区;全世界范围内每年有 400 多万新感染的虫媒传染病病例,总计临床病例数达 5 亿~7 亿人;全球近一半人曾经至少感染过一种虫媒病原体。虫媒传染病已经对人类的健康构成了严重威胁,也给社会和经济带来了重大的损失。

世界卫生组织公布的数据表明每年由虫媒传染病导致的全球 GDP 损失就超过 2000 亿美元。虫媒传染病在世界范围内已经从单纯的健康问题上升到社会、经济乃至政治问题。

随着全球气候变暖,虫媒孳生、栖息环境不断扩大,同时因为全球经济一体化进程的加快,国际间人员交往和经济贸易量增长迅速,由国际航运交通工具及其运输的集装箱、货物被动携带的虫媒扩散到世界各地,造成传染病在国际间传播流行的危险性急剧增加,对人类健康的危害也在进一步加大。

传染病在其漫长的旅途中总有人类、动物、植物和货物为伴。Gubler 总结道,“自有史料记载以来,疾病的流行总是跟贸易相关”。当今全球一体的经济加速了资本、知识、牲畜、作物和人员在不同国家间的流动,也使病原体和虫媒传给新地域里的新宿主的速度加快。

加入世界贸易组织后,我国对外贸易正在迅速增长,全国检验检疫部门每年需要对高达 2 万多亿美元货值的出入境物流、3 亿多出入境人员、6000 万辆出入境交通工具和集装箱实施检验检疫。面对虫媒及虫媒传染病传入的潜在风险激增的现状,积极开展输入性虫媒及虫媒传染病的监测和控制,对防止虫媒传染病的传入和发生尤其重要。

历史上各种虫媒传染病的大流行常因国际交往,通过感染病例或携带病原体的虫媒被动输入而引发。为了有效防止虫媒及其传播的各种疾病传入,许多国家

制定了严格的法律规章。世界卫生组织在《国际卫生条例》中明确规定，飞机到达时必须持有有效的灭蚊证书，船舶到达时必须持有有效的卫生控制证书。伴随着全球贸易保护主义抬头，这些规定有时甚至被作为非关税技术壁垒而限制进口贸易。

美国国家科学院医学研究所 (IOM) 微生物威胁论坛于 2007 年 6 月在科罗拉多州柯林斯堡召开了一期公开研讨会，从宏观角度审视了虫媒传染病给全球带来的负担，讨论了未来能够成功减轻和应对虫媒传染病的策略，并深入探讨了虫媒传染病的生物学和生态学背景，虫媒传染病对健康和经济产生的影响，新发与复发虫媒传染病方面的预防和控制手段、科学与技术上的进步，以及应对当前和未来威胁的综合策略。此次论坛的参加人员阵容强大，均为美国国家疾病预防与控制中心 (CDC)、美国国立卫生研究院 (NIH) 和美国各大院校中虫媒传染病相关领域的专家、学者等，涉及内容高端、前沿，观点、理论独到新颖，并出版了《虫媒传染病流行病学研究进展》一书，对虫媒传染病的预防和控制工作有很好的指导和借鉴意义。

深圳出入境检验检疫局医学媒介生物实验室是国家质量监督检验检疫系统的国家级重点实验室、中山大学公共卫生学院的教学基地和中国检验检疫科学研究院 (深圳) 蚊传疾病研究室。该实验室长期从事国境口岸医学媒介生物及相关传染病的监测检测、科研和教学工作。实验室及相关部门的工作人员在繁忙的工作之余翻译了这本书，希望能够为我国出入境检验检疫机构、相关院校及研究机构、疾病预防控制机构、公共卫生管理和监督部门等人员提供参考，从而提高对虫媒传染病的监测、预防、控制、研究能力和面对疾病暴发时的应急反应能力。

刘胜利

2009 年 11 月 20 日

前 言

应美国国家疾病预防控制中心 (Centers for Disease Control and Prevention, CDC) 和美国国立卫生研究院 (National Institute of Health, NIH) 要求, 医学研究所 (Institute of Medicine, IOM) 于 1996 年成立新发传染病论坛 (下文简称“论坛”——译者注)。该论坛旨在有计划地为政府、学术界和工业界领导人提供见面机会, 讨论共同关注的有关研究、预防、监测和管理新发及复发传染病的问题。在这个过程中, 论坛提供了一个空间, 以方便大家互通信息、交换意见, 明确亟待关注的领域, 通过提高认识、加强共识, 澄清政策争议, 向决策者们阐述科学和政策上的议题。论坛谋求的是阐明这些议题, 而不是解决它们, 因此, 论坛对任何组织机构面临的具体政策动议不作任何建议。本论坛的价值在于成员来自各行各业, 且其在论坛活动中能够不遗余力, 各尽其能。2003 年 9 月, 论坛更名为微生物威胁论坛。

在人类历史上, 疟疾、登革热、黄热病、鼠疫、锥虫病、利什曼病等虫媒传染病一直是人类致病、致死的主要原因。20 世纪初期至中期, 通过一系列的干预、预防和控制手段, 人们有效地控制了黄热病、疟疾、盘尾丝虫病及其他一些疾病的病媒生物。然而, 在过去的 20~30 年中, 由于种种原因, 一些已被“消灭”的虫媒传染病大有死灰复燃之势, 新型虫媒传染病的全球性暴发、复发和流行也时有发生。新发虫媒动植物疾病不仅威胁人类健康, 同时还严重危害区域生态经济。蓝舌病病毒 (一种由昆虫传播给牛、羊的病原体) 每年给美国畜牧业带来的贸易损失和检测费用约达 1.25 亿美元。

虫媒传染病在经济和公共卫生方面的重要性愈加突出, 加之能够导致疾病大规模暴发, 将会继续严重威胁人类、牲畜和作物的健康。但出于各种原因, 国内外对这些疾病的检测、确认和控制能力十分有限。

为了讨论虫媒传染病对人类健康及生态与环境的重要影响, 医学研究所微生物威胁论坛于 2007 年 6 月在科罗拉多州柯林斯堡 (Ft. Collins, Colorado) 召开了一期公开研讨会, 通过邀请参与者进行演示和讨论, 一起研究了与虫媒传染病发生及当前国内外监控能力相关的各种要素, 探讨了如何满足需求、抓住机遇, 提高对虫媒传染病的监测、诊断能力和面对疾病暴发时的应变协调能力等。

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Forum on Microbial Threats

目 录

中译本序

前言

| | |
|---|-----|
| 0 概论和评估 | 1 |
| 0.1 了解环境、人类健康与生态的关系 | 1 |
| 0.2 虫媒传染病的威胁：过去、现在与将来 | 2 |
| 0.3 虫媒传染病的特点 | 8 |
| 0.4 虫媒传染病的新发要素 | 11 |
| 0.5 经验教训：虫媒传染病案例研究 | 19 |
| 0.6 需求与机遇 | 23 |
| 参考文献 | 27 |
| 1 虫媒传染病的新发与复发 | 35 |
| 1.1 概述 | 35 |
| 1.2 新发/复发虫媒传染病的全球性威胁 | 36 |
| 1.3 环境与人类健康的生态关系：以虫媒传染病为例 | 53 |
| 1.4 新发植物性虫媒传染病的生态学机制 | 57 |
| 1.5 疾病的生态学机制：人类健康与动物健康的交叉点 | 63 |
| 1.6 气候改变与健康：对疾病风险的全球影响与地方影响 | 71 |
| 1.7 气候变化与虫媒传染病：关于气候对北美莱姆病和西尼罗热影响的 最新研究 | 84 |
| 参考文献 | 89 |
| 2 虫媒传染病的监测与控制 | 107 |
| 2.1 概述 | 107 |
| 2.2 纵向领域研究将引领一场登革热预防观念的转变 | 110 |
| 2.3 控制登革热的新型决策支援和病媒控制方法 | 125 |
| 2.4 西尼罗热病毒 | 134 |
| 2.5 裂谷热：一种新发的节肢动物媒介传染病 | 143 |
| 2.6 昆虫学监测的作用和节肢动物媒介传染病控制计划评估 | 147 |
| 2.7 人畜共患虫媒传染病及其生态与经济含义：蓝舌病在欧洲 | 157 |
| 2.8 环境因素影响辛诺柏型汉坦病毒在鼠类之间（及对人？）的传播 | 166 |
| 参考文献 | 180 |

| | |
|---|------------|
| 3 综合策略应对虫媒传染病 | 206 |
| 3.1 概述 | 206 |
| 3.2 控制虫媒传染病的需求与机遇：对医学研究所微生物健康威胁委员会所提建议的回应 | 207 |
| 3.3 策略整合：监测、诊断与应对 | 222 |
| 3.4 监测、诊断与应对：策略整合 | 226 |
| 3.5 在生态变迁的时代对抗虫媒传染病 | 230 |
| 3.6 国家过敏症与传染病研究所虫媒生物学计划 | 238 |
| 参考文献 | 241 |
| 附录 缩略词表 | 250 |
| 彩图 | 250 |
| 图1 | 250 |
| 图2 | 250 |
| 图3 | 250 |
| 图4 | 250 |
| 图5 | 250 |
| 图6 | 250 |
| 图7 | 250 |
| 图8 | 250 |
| 图9 | 250 |
| 图10 | 250 |
| 图11 | 250 |
| 图12 | 250 |
| 图13 | 250 |
| 图14 | 250 |
| 图15 | 250 |
| 图16 | 250 |
| 图17 | 250 |
| 图18 | 250 |
| 图19 | 250 |
| 图20 | 250 |
| 图21 | 250 |
| 图22 | 250 |
| 图23 | 250 |
| 图24 | 250 |
| 图25 | 250 |
| 图26 | 250 |
| 图27 | 250 |
| 图28 | 250 |
| 图29 | 250 |
| 图30 | 250 |
| 图31 | 250 |
| 图32 | 250 |
| 图33 | 250 |
| 图34 | 250 |
| 图35 | 250 |
| 图36 | 250 |
| 图37 | 250 |
| 图38 | 250 |
| 图39 | 250 |
| 图40 | 250 |
| 图41 | 250 |
| 图42 | 250 |
| 图43 | 250 |
| 图44 | 250 |
| 图45 | 250 |
| 图46 | 250 |
| 图47 | 250 |
| 图48 | 250 |
| 图49 | 250 |
| 图50 | 250 |
| 图51 | 250 |
| 图52 | 250 |
| 图53 | 250 |
| 图54 | 250 |
| 图55 | 250 |
| 图56 | 250 |
| 图57 | 250 |
| 图58 | 250 |
| 图59 | 250 |
| 图60 | 250 |
| 图61 | 250 |
| 图62 | 250 |
| 图63 | 250 |
| 图64 | 250 |
| 图65 | 250 |
| 图66 | 250 |
| 图67 | 250 |
| 图68 | 250 |
| 图69 | 250 |
| 图70 | 250 |
| 图71 | 250 |
| 图72 | 250 |
| 图73 | 250 |
| 图74 | 250 |
| 图75 | 250 |
| 图76 | 250 |
| 图77 | 250 |
| 图78 | 250 |
| 图79 | 250 |
| 图80 | 250 |
| 图81 | 250 |
| 图82 | 250 |
| 图83 | 250 |
| 图84 | 250 |
| 图85 | 250 |
| 图86 | 250 |
| 图87 | 250 |
| 图88 | 250 |
| 图89 | 250 |
| 图90 | 250 |
| 图91 | 250 |
| 图92 | 250 |
| 图93 | 250 |
| 图94 | 250 |
| 图95 | 250 |
| 图96 | 250 |
| 图97 | 250 |
| 图98 | 250 |
| 图99 | 250 |
| 图100 | 250 |