中国疾病预防控制中心
寄生虫病预防控制所

年　　报
ANNUAL REPORT

2004

NATIONAL INSTITUTE OF PARASITIC DISEASES
CHINESE CENTER FOR DISEASE CONTROL AND PREVENTION

东亚区域间疟疾控制会议
Biregional Meeting for Control of Malaria in East Asia

亚洲疟疾培训网络理事会暨理事会－合作组织年会
Annual Meeting of the Executive Board and Eb-Partners on Asia Collaborative Trainng Network for Malaria

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上海 • SHANGHAI

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§1. 2004 年工作总结及 2005 年工作要点

2004 年行政业务工作总结

2004 年是深化改革之年，在党的十六大精神和"三个代表"重要思想指导下，我所以发展为主线，以改革为动力，以提高疾病控制和科研能力为抓手，始终保持奋发有为的精神状态，解放思想、与时俱进，狠抓落实，经过全所职工的共同努力，完成了年初制定的各项工作目标。

现将我所 2004 年的行政业务工作总结如下：

1 积极稳妥地推进改革，大幅度改善职工待遇

根据上级部署，积极推进本所的改革，进一步调整职能、机构、岗位，完善管理。在岗位确认和细化考核标准的基础上，根据中心的统一方案，组织实施专业技术岗位特殊津贴与高风险岗位补贴的相关工作，再次大幅度地提高了职工待遇， 调动了全所职工的积极性。

抓好事关事业发展的重要问题、重大发展项目、重大改革任务，较好地处理了改革、发展和稳定以及日常工作和应急反应的关系。

对所有中层干部进行了述职考评。按照发展要有新思路、改革要有新突破、开放要有新局面、各项工作要有新举措的要求，激励所有干部再接再厉，以更饱满的精神投入工作。

2 开拓性地完成了各项防治任务

2.1 技术指导和技术支持

今年以来，我所专家先后赴湖南、湖北、江西、安徽、江苏、四川、云南、海南、河南、广西、甘肃、新疆等省（自治区）百余人次，为疫区提供技术支持与指导，与现场防治工作者共同开展防治和疫情处理等工作，有效遏制了疫情的蔓延。

2.2 技术交流与培训

为全面提高全国防治人员的技术水平，我所先后举办了十余次各类培训班，包括血吸虫病病原学、血清学、临床检测技术、查螺技术等；全球基金疟疾项目的管理、财务、健康教育与健康促进、技术方案、媒介生物调查与鉴别等；丝虫病监测技术、包虫病诊断技术以及食源性寄生虫病防治等全国性的培训班和研讨会。培训了数百名基层技术骨干人员，为全国血吸虫病流行病学调查、疟疾项目、以及全国人体重要寄生虫病现状调查等工作的顺利开展奠定了良好的基础。

2.3 健康教育与健康促进

在疟疾、血吸虫病等防治项目中，为提高群众自我防护意识，改进病人就医及服药的依从性，改善疫区群众的生活方式，加强传染源的管理，促进社区关怀政策的实施，在现场调研分析和多次论证的基础上，根据当地居民对防病知识的了解程度，民族特点，我所

专家编制了多种形式的宣传材料并制作一些方便实用的生活、学习用品发放到疫区的乡村诊所、农贸集市、学校、村头等公共场所和当地群众、学生的手中，并向流动人员比较集中的云南边境地区发放疟防宣传册，把健康教育与宣传工作落实到基层。

2.4 技术督导与检查

在防治工作进展的同时，为有效杜绝疫情反复，防治工作松懈等现象，在卫生部的领导下，我所专业人员多次赴疫区开展督导检查工作，并下发了新发病例核实技术方案；与 WHO 专家共同检查消除丝虫病的工作；对安徽、江西、湖北和四川等省血吸虫病防治工作进行了明察暗访以及全球基金疟疾项目的技术督导工作等。

2.5 建立健全应急反应机制，提高应急反应能力

为提高突发公共卫生事件应急反应处理能力，建立健全寄生虫病应急反应机制、预测预警系统，我所建立了应急反应专家队伍，选派了一批中青年骨干参加了由中国疾病控制中心组织的 “突发公共卫生事件应急处理系列培训班”，并成立了疾病控制与应急处理办公室，完成了人员和设备建设。进一步细化了《血吸虫病重大疫情应急处理预案》并上报上级主管部门。

2.6 疫情监测与信息管理

根据卫生部要求，我所承担了第三次全国血吸虫病流行病学抽样调查（流调）的组织实施工作。完成了全国人体重要寄生虫病现状调查工作总结 ，目前正在进行数据处理和分析。

完成 2003 年度全国血吸虫病、疟疾、丝虫病、包虫病防治工作调查表的整理、汇总工作，掌握全国疫情与防治工作进展。积极参与全国血吸虫病监测点工作，通过纵向监测，了解血吸虫病疫情动态,为全国寄生虫病防治工作提供基础资料与科学依据。

及时汇总上报重点地区急性血吸虫病疫情周报，分析预测疫情趋势，及时进行急性血吸虫病疫情漏报情况调查，提出应急处理对策，有效控制了疫情。在掌握全国疟疾疫情资料和调查研究的基础上，对全国疟疾疫情发展趋势进行了科学的分析与预测。

2.7 认真完成卫生部和中国疾控中心交办的任务

我所专家积极参加卫生部、中国疾病控制中心组织的政策调研、督导检查、技术标准编制等工作，为卫生部、中国疾病控制中心提供技术支持。起草和修订多个技术方案，如《血吸虫病防治条例》,《全国血吸虫病综合治理项目规划纲要》和《2004 年度全国寄生虫病防治项目》编制、预算以及经费管理办法,《血吸虫病重大疫情处理预案》,《血吸虫病疫情月报表》，六种疾病的国家诊断和处理标准的修订等。

3 科研工作取得重大进展

3.1 课题执行和申请情况

2004 年承担国家科技部、卫生部等重点项目和国际合作科研课题 20 个均按计划执行，其中 6 个课题已按计划完成。全年向国内外 17 个渠道申请课题 34 项，其中 16 项获准，另有 2 个“十五”国家科技攻关项目和 1 个“863”项目经评审继续获得滚动资助。全年申请到的科研经费突破 1000 万元。

2004 年有 3 个课题即科技部中央院所社会公益研究资助项目“中国西部地区包虫病和

黑热病的分布调查研究”,“长江流域典型环境改变对血吸虫病传播的影响”以及基础工作资助项目“中国人体寄生虫及媒介标本收集、整理和保存”通过了科技部组织的验收，并取得了良好的成绩。

3.2 加强研究生管理和人才培养

2004 年共招收研究生 10 名，其中博士研究生 3 名。在读研究生 33 名，其中博士研究生 9 名。举办了“研究生寄生虫学与专业英语培训班”，加强了学生的专业基础知识，还专门对研究生培养及管理进行了研讨，使研究生的培养工作更规范。

2004 年有 19 名职工参加成人继续教育的专业学习，9 名在职科技人员攻读硕士、博士学位，5 名科技和管理人员被选送出国参加短期培训或参加培训班学习。所内举办了“公共卫生政策与条例学习班”，“实验室生物安全培训班”及“实验室安全专项培训班”等，对职工进行了全员培训。

3.3 继续增进国际合作与交流

作为本届理事会协调国主席，受卫生部委托，我所再次成功举办了“亚洲疟疾培训网络（亚网）理事会暨理事会—合作组织年会”，来自柬埔寨、中国、印度尼西亚、老挝、马来西亚、菲律宾、泰国和越南等理事国的代表及 WHO / WPRO （西太区办事处）、WHO/SEARO（东南亚区办事处）、WHO/RBM（湄公河流区域遏制疟疾项目）等合作组织的代表共 39 人出席了大会。

受卫生部国际合作司及世界卫生组织西太区（WHO/WPRO）委托，我所还承办 “东亚区域间疟疾控制会议”，来自中国、朝鲜和韩国等三国的 17 位代表及世界卫生组织（WHO）、WHO/WPRO、WHO/SEARO 的官员、临时顾问等 18 人出席大会。

通过承办国际会议，使我所有更多参与国际合作与交流的机会，提高了我所在国际同行间的地位。今年共向 WHO/TDR、瑞典全球基金、韩国国际协力团基金、日本合作课题等渠道申请国际合作课题 4 项。我所邀请 WHO/WPRO 三位疟疾项目官员及本国专家积极申请第五轮全球基金疟疾项目。还邀请 WHO/WPRO 三位寄生虫病项目官员参加我所举办的“全国人体重要寄生虫病现状调查报告论证会”，提供技术指导与评估。

本年度共接待外宾 32 批 110 人次，出访 30 批，38 人次。

3.4 科技成果与论文

3.4.1 一类新药“三苯双脒肠溶片”获得新药证书。

3.4.2 发表论文 52 篇，其中在 SCI 收录的专业期刊发表 6 篇（4 篇在国外专业期刊上发表）。

3.4.3 我所与第二军医大学共同主编的《分子寄生虫学》出版。

3.5 其他工作

3.5.1 本所主办的《中国寄生虫学与寄生虫病杂志》在 2004 年版《中国科技期刊引证报告》中影响因子为 0.429，总被引频次 445，在同类期刊中名列前茅，并荣获卫生部首届医药卫生优秀期刊奖一等奖。

3.5.2 完成学术委员会的换届工作，产生了我所第六届学术委员会委员，讨论制定了所学术委员会组织条例和学术委员守则。

3.5.3 成立所生物安全委员会和伦理审查委员会并制定了相关章程。

3.5.4 制订了我所中青年科学基金管理办法；完成我所科技计划信用管理实施方案。

3.5.5 挂靠在我所的中华预防医学会医学寄生虫分会征集参加首届全国优秀科普挂图评选作品共 8 件，其中我所《防疟保健康、共同奔小康》获首届全国优秀科普挂图征集评选活动优秀奖。

3.5.6 支持挂靠在我所的专业学会、协会开展高水平的学术活动，如支持中华预防医学会寄生虫分会举办“全国媒介生物学与控制高级研讨班”，“全国第二届医学寄生虫学与热带医学研究新进展研讨会”；与中国地方病协会血吸虫病专业委员会联合举办“全国血吸虫病可持续发展的防治策略研讨会”，以及支持上海市寄生虫学会举办了“2004 年学术年会暨重要人体寄生虫病现状调查总结会”。

4 以疾病预防控制工作为中心，完成其他各项任务

4.1 配合本所实验室装修和危房改造工程，做好人员过渡和搬迁工作，尽管该项工作面广量大，但经过统筹安排，保证了搬迁过程中本所工作不断，秩序不乱。并在年内又进行一次清产核资工作，对各部门的国有资产进行清查核对。

4.2 认真吸取教训，本着对党和人民的事业高度负责的精神，对本所的实验室生物安全进行认真、细致的自查，按规范的要求进行整改，健全了规章制度、落实了责任制、制定了应急预案，并分两个阶段对有关人员进行了培训，尤其对实验室的工作人员进行了重点培训。

4.3 加大文明建设的力度，增加对文明建设的投入，建立现代企业文化的理念，并发挥职工的主观能动性，美化工作环境，创建文明、健康的文化氛围。

4.4 把确保安全放在首位，加强防火、防盗等各项工作，落实安全工作责任制，确保 2 号楼和 3 号楼施工期间所内的安全，并改造了我所 1、3、4 号楼消防设施。

4.5 以“三苯双脒”取得新药准产证为契机，与厂方一起召开了三苯双脒研讨会，与各省相关站所进行了交流，为打开该药的销售市场奠定了基础。

4.6 继续发挥我所在杀虫剂研制、测试以及在寄生虫病诊断科研方面的优势，提供科技咨询、检测服务。完成卫生杀虫剂样品的药效测试 156 项，毒理测试 11 项，产品监制 4 项，检测临床病原送检标本 640 份，血清标本 1402 份，血吸虫病普查 3460 人次。科技开发创收有新的提高。我所还与国家烟草总局合作，建立了测试平台，开展毒理测试项目。

4.7 举办一期中层干部培训班，通过学习，提高干部的理论水平、管理水平，按照客观规律和科学规律办事的能力，以不断适应新形势、新任务的要求。

4.8 挖掘潜力，对部分研究生宿舍进行了改造，改善了研究生的住宿条件。

5 圆满完成 2004 年的 5 件实事

5.1 在合理规划、科学论证的基础上，作为突发性公共卫生应急体系重要组成部分的“急性虫媒传染病实验室”改造工程顺利开工，生物安全等级Ⅱ级实验室和 SPF 级的动物模型保种实验室也将同时建设，预计将于明年完工并投入使用。

5.2 由于瑞金医院门急诊大楼的施工对原已是严重损坏的 4 号楼构成了重大安全隐患，经过大量艰苦而有效的协调工作，终获规划部门批准立项，并于 11 月下旬完成危房改造，彻底杜绝该楼的安全隐患，食堂也恢复供应工作午餐。

5.3 人体寄生虫和媒介标本馆于 10 月份正式开馆，该馆的建成对加大寄生虫病教育宣传的力度、普及寄生虫病知识、提高科研和科普功能具有重要意义。
5.4 高度重视人才培养工作，设立 20 万元的所长专项基金，资助了 3 项青年科技项目，为 10 多位专业人员提供深造机会，全年举办各种专业知识和管理知识讲座 20 次，培训班 5 期，提高了各类人员的素质，在所内营造了一个良好的学习氛围。
5.5 切实关心职工的身体健康，组织全所职工进行体格检查。

通过一年辛勤的工作，为我所走上可持续发展的道路打下了扎实的基础。但我所也应认识到存在的不足，尤其是目前寄生虫病面临的任务仍繁重、很艰巨，一些寄生虫病上升的趋势尚未得到有效控制。我所需要进一步深化改革，转变职能，调整岗位，解决忙闲不均的现象，使每位职工的聪明才智得到充分发挥。经过锻炼，我所年轻同志挑起了重担，但是离国家队一流水平还有差距，需要继续加强人才培养，加大引进人才的力度，加强人才队伍的建设。

我们将认清形势，发扬求真务实精神，坚持稳中求进，抓住机遇，与时俱进，以改革促发展，团结全所职工同心同德，开拓进取，努力开创新局面。

2005 年行政业务工作要点

2005 年是求真务实、开拓进取之年，我们要在党的十六届四中全会精神和"三个代表"重要思想指引下，以寄生虫病预防控制工作为中心，以科学的发展观为指导，努力提升寄生虫病防治能力和科研水平，不断攀登与超越，逐步形成一支具有国际影响和国内优秀的寄生虫病防治科研队伍。

1 进一步加强疾病控制队伍的建设，提高疾病控制和应急处理的能力

随着国家对公共卫生事业的日益重视，投入也将大幅度增加，这对我所的疾病控制队伍来说既是机遇，更是挑战，每位疾病控制人员要有高度的历史责任感，不断提高疾病控制能力和现场解决问题的实际能力。为此，要做好以下两方面工作。

一是提高疾病控制队伍的专业理论水平。针对本所承担的寄生虫病控制任务，我们要树立为全国服务，为全国培养一批高素质的专业技术和业务管理队伍的思想，通过多种途径，对全国不同层次的专业人员进行重点培训，以适应新形势、新任务的需要。与此同时，对本所年轻的疾病控制人员加强素质培训，以不断提高他们的疾病控制理论水平。

二是增加疾病控制人员的实践和锻炼的机会。我所将充分发挥老专家的作用，在鼓励老同志传授经验、发挥传、帮、带作用的同时，积极支持青年疾病控制人员多下现场，在实战中得到培养和锻炼，以增强责任感，提高现场工作的实际能力，并且保持谦虚谨慎的作风，处理好与各地防治专业人员的关系。

在此基础上，我们还要健全应急反应系统，充实寄生虫病预防控制队伍，明确职责，并随时做好应急准备，一旦有疫情发生，即能发挥国家队应有的作用。

2 广泛开展国内外科技合作与交流，努力提高科技水平

高水平的寄生虫病预防控制工作需要用高水平的科技作支撑，针对目前寄生虫病防治

工作形势，2005 年我所将以提高科技水平为抓手，在努力健全各学科发展的前提下，进一步提升我所的科技实力。因此，一方面要努力完成国家“十五”攻关等项目的应用性研究工作，直接为寄生虫病防治工作服务，另一方面还要加强 863 等项目以及全球基金、TMRC 等国际合作项目的应用研究与应用基础性研究，争取多出可服务于现场防治工作的新技术、新方法和新措施。

大力推进国际合作与交流，积极承办各类国际专业会议和培训班，以实力发展提高我所的国际知名度，我们还要积极参与国际竞争，尽力争取国际合作项目。

发挥本所的整体优势，积极争取大的科技项目和经费，广大疾控和科研人员要有奋力爬坡的精神和迎难而上的勇气，全力争取，一旦成功，所里将给予重奖。

3 落实急性虫媒传染病实验室改造项目，切实加强实验室生物安全管理

2005 年将抓紧落实急性虫媒传染病实验室的改造，整个实验室将装修一新，新的仪器设备将投入使用，同时还将建成 SPF 级的动物模型保种实验室和生物安全Ⅱ级实验室，届时将全面提高和改善我所的实验条件，提升科研与检测能力，有利于对国家公共卫生突发事件作出应急反应。同时我们必须强化安全意识，加强实验室生物安全管理，检查督促制度化，发现问题及时整改。全所科技人员要认真学习有关规章制度，自觉遵守实验室生物安全管理规定，严格按照操作规程和技术规范开展工作，还要以严谨的科学态度，提高自我防护意识。

4 围绕所的中心工作，完成其他各项任务

4.1 配合急性虫媒传染病实验室改造工作，及时做好清产核资和国有资产登记工作，摸清家底。

4.2 加强对已出租房屋的安全管理，严格按合同办事。

4.3 在建所 55 周年之际，举办一系列学术活动，弘扬所的光荣传统，提升学术氛围，加强与国内外同行之间的学术交流与合作，展示 55 年来在科研与疾病控制方面取得的成就，促进我所事业发展，扩大国内外影响。

4.4 为适应防治任务的需要和科技发展的形势，我所将继续高度重视人才的培养工作，把此项工作制度化，长抓不懈。今年将根据需要制定培训计划，使广大疾控、科研和管理人员能及时掌握新概念、新知识，扩展视野。

4.5 实施特殊津贴后，我们将根据岗位要求及考核标准加强管理，提高职工的工作责任心和办事效率，并根据工作需要，对个别部门的职能和部分岗位的人员进行调整，逐步理顺工作关系，形成新的激励机制。

4.6 进一步做好科技开发工作，增强自身造血功能，力争开发创收再上一个新台阶。

4.7 完成挂靠在我所的卫生部各专家咨询委员会的换届工作，为中青年专家的脱颖而出创造条件。

4.8 完成卫生部寄生虫病原与媒介重点实验室管理与学术委员会换届，积极扩大重点实验室的开放、合作与交流。

5 2005 年要办的 6 件实事

5.1 完成急性虫媒传染病实验室改造工程，并投入使用，提升我所的疾病控制与科研能力。
5.2 完成所内环境优化工程，更新部分地下管线，翻新地坪，整修所内花园，整治环境，使所容所貌彻底改观，给职工创造一个良好、温馨的工作氛围。
5.3 完成构建本所信息平台，建成一个 20 兆宽带专线接入、300 个端点的局域网系统和 1 个计算机室；所内电话系统换代；设计并完成具有本所特色的网页，以跟上信息时代的步伐，提高工作效率。
5.4 完成双路进电工程设备安装，保证重要仪器设备不间断供电。
5.5 按照以人为本的原则，完善配套设施，建成上海市医务工会达标的"职工之家"，为职工提供休闲、健身的场所，增强凝聚力。
5.6 年内开展特殊工种、高风险技术人员及妇女同志的专项体检。

发展是硬道理，我们要继续发扬同心同德、开拓进取的精神，在新的起点上，继续站高一步、看远一步、想深一步，按照党的十六大要求，聚精会神搞建设，一心一意谋发展。不断增强改革的主动性和自觉性，继续保持心齐、气顺、劲足的良好局面，不断梳理和解决存在的问题，扎扎实实地推动本所各项工作的发展。

§1. REPORT ON THE WORK IN THE YEAR 2004& KEY POINTS OF THE WORKING PLAN FOR THE YEAR 2005

ANNUAL DIRECTOR'S REPORT FOR 2004 ON MANAGEMENT OF PROFESSIONAL AND ADMINISTRATIVE AFFAIRS

The year 2004 witnessed the further reform of IPD. Guided by the authorities from China CDC, Department of Disease Control, MOH and Shanghai Municipality Health Bureau, the Institute, driven by the reform, had made great efforts on the improvement of capacities for disease control and prevention and for scientific research. All these goals fixed last year have been achieved through the full-hearted devotions and hard working of all staff members.

The management of administrative affairs in 2004 can be summarized as follows:

1 Reform was carried on actively and gradually

The reform of our Institute was carried on according to the superior's direction. The function, organization and position to improve the management of our Institute were further adjusted. On the basis of confirming positions and detailing assessment criteria, we applied the uniform scheme of China CDC to the work about the special allowance for professional staff and staff with high-risk positions, and as a result, the income of our staff has been increased greatly, and their enthusiasm for the work.has been mobilized.

We dealt with the important problems, development programs and reform tasks concerning our career development efficiently, and handled well the relationship among reform, development and stabilization and the relationship between the daily routine and the emergency treatment.

All cadres above middle-level reported their performances and were assessed. We encouraged every cadre to make persistent efforts and to devote to their job under the requirements of developing with new ideas, reforming with new breakthroughs and opening new fields of research.

2 All tasks of disease control and prevention were accomplished perfectly

2.1 Technological guidance and support

Since the beginning of this year, the experts in our Institute have been dispatched to Hunan, Hubei, Jiangxi, Anhui, Jiangsu, Sichuan, Yunnan, Hainan, Henan, Guangxi, Gansu, Xingjiang, etc. more than 100 person-times, providing technological guidance and support and working together with the local health workers to deal with the epidemic situations so as to interrupt the spread of epidemic efficiently.

2.2 Information exchange and training

In order to improve the overall skills for disease control and prevention in our country, we held the training courses and seminar more than ten times successively on many aspects

including pathology, serology, clinical examination and snail detection for schistosomiasis; management, financial affairs, health education and health promotion, technology, biological vectors survey and differentiation of the Global Funds to Malaria; filariasis survellaince; echinococcosis diagnosis; control and prevention of food-born parasitic diseases, and so on. Hundreds of skeleton technicians were trained, which served a good base for the nation-wide epidemiological survey of schistosomiasis, project on malaria and the survey of key human parasitic diseases.

2.3 Health education and health promotion

In order to enhance residents' awareness of self-protection and healthy life styles, increase patients' compliance to treatment, strengthen the administration of reservoir and improve the implementation of community-care policy in the projects of malaria and schistosomiasis, our experts designed different kinds of propaganda materials and some practical things for daily life and study based on field study, reasoning, the knowledge of local residents on disease prevention and ethnologic characteristics. All of these things were distributed to the village clinics, markets, schools, public places of the villages, residents and students in the endemic areas. The pamphlets about malaria were also distributed to Yunnan border areas where transient population concentrated so that the health education and health promotion could reach every person.

2.4 Technological supervision and examination

In order to prevent effectively the epidemic from repeating and the work of control and prevention from being slack, the professionals of our Institute went to the endemic areas to supervise control work many times, and released the technological scheme of verification on new cases under the guidance of Ministry of Health. They checked the work of eliminating filariasis together with WHO experts, observed publicly and investigated privately the work of schistosomiasis control and prevention in Anhui, Jiangxi, Hubei and Sichuan provinces, and supervised technically the Global Funds for Malaria Control.

2.5 Further strengthening and enhancing the ability of emergency responses

In order to improve the ability of dealing with emergent public health events, to set up and improve the emergency response system and early warning system, we organized an expert team for emergency response and sent some young and middle-aged backbone to study in the serial training courses of emergency treatment of urgent public health events held by China CDC. We also established an office of disease control and emergency response, finishing personnel and equipment construction, and besides, we detailed the scheme of severe epidemic emergency treatment on schistosomiasis further more and reported to the superior.

2.6 Epidemic surveillance and information management

According to the request of Ministry of Health, we undertook the organization work of the Third Nation-wide Epidemiological Sampling Survey for Schistosomiasis and fulfilled the work on summing up the National Investigation of Key Human Parasitic Diseases. Now the data analysis is in progress.

The collection and processing of the questionnaires for schistosomiasis, malaria, filariasis and hydatidosis prevention and control of 2003 had been done so that the prevalence of the above-mentioned diseases was acquired and the relevant control progress was achieved. Meanwhile, IPD was also actively dedicated to the field investigation of schistosomiasis prevention, collecting first-hand information, monitoring its prevalence so as to provide basic data and scientific evidence for the national parasitic diseases control and prevention program..

We collected and reported cases with acute schistosomiasis weekly, analysed and predicted the epidemic trend, carried on the investigation on missing report of acute schistosomiasis cases, and put forward countermeasures to put the epidemic under control. We also analyzed and predicted the epidemic trend of malaria on the basis of data collection and surveillance.

2.7 Fulfilled the tasks assigned by Ministry of Health and China CDC

Our experts participated in the policy investigation, supervision and technical criteria writing organized by Ministry of Health and China CDC to provide technological support for the superiors. We drafted and revised a lot of technological schemes, such as control and prevention regulations of schistosomiasis, national planning outlines of comprehensive administration project on schistosomiasis, national prevention and control projects on parasitic diseases in 2004 and the budget and funds management methods, the treatment scheme of severe schistosomiasis epidemic, the monthly report system on schistosomiasis epidemic, national criteria on the diagnosis and treatments for six parasitic diseases.

3 Great progress in scientific research

3.1 Ongoing projects and funds application

A total of 20 projects, including the state-supported projects and international collaborations, were accomplished as planed in 2004. Of 34 research proposals applied for research funds, 16 were approved; and another 3 projects supported by Tenth Five-year National Key Project and the 863 high-tech project got continuous support. More than 10,000,000 Yuan RMB were achieved to support research activities in the Institute.

Three projects were evaluated in 2004 by Ministry of Science and Technology, namely the distribution survey on hydatidosis and leishmaniasis in the West China, the impact of environmental changes on the transmission of schistosomiasis in the Yangtze River valley, and collection, processing and conservation of specimens of human parasites and vectors in China.

3.2 Postgraduate education and staff training

Ten students were enrolled in 2004 and three of them were Ph.D. students. A total of 33 graduate students were trained in the institute, of which, 9 were doctorate students. Parasitology and professional English training course was launched to improve graduate students' knowledge. Special research and discussion on graduate student training and management had been done.

Nineteen staff members participated in further education, 9 persons were accepted for advanced training, and 5 persons went abroad for short-term training. Public health policy training course，bio-safety in laboratory training course, special training on laboratory safety

were launched and all staff members attended.

3.3 International cooperation and exchange

The Annual Meeting of Executive Board and EB-partner Meeting on Asia Collaborative Training Network for Malaria were held. A total of 39 persons from Thailand, China, Indonesia, Laos, Malaysia, the Philippines, Vietnam, Cambodia, WHO/WPRO and WHO/SEARO and WHO/RBM.

Entrusted by MOH and WHO/WPRO, the Interregional Workshop on the Control of Vivax Malaria in East Asia was held by the Institute. Seventeen representatives from China, North Korea, South Korea, 18 officers and temporary advisers from WHO, WHO/WPRO, and WHO/SEARO attended the meeting.

Through holding international meeting, we got more opportunity to attend international cooperation and exchange, and to make our Institute known to the outside world. Four international cooperation projects supported by WHO/TDR, Sweden Global Funds, South Korea International Cooperation Funds and Japan Cooperation Program, respectively were approved in 2004. Three malaria project officers from WHO/WPRO and experts from China were invited to apply the 5th round Global Funds for Malaria Control Project. Three parasitic diseases project officers from WHO/WPRO were invited to attend the discussion meeting about the survey report on national important human parasitic diseases and technological direction and evaluation were given.

A total of 110 foreign person-times in 32 batches visited the institute and 38 person-times of our staff in 30 batches visited foreign countries.

3.4 Achievements and publication

3.4.1 Tribendimidine, the first rank novel drug, was awarded the new medicine certification.

3.4.2 Fifty-two scientific papers were published in 2004 and 6 of them were published in scientific periodicals embodied by SCI.

3.4.3 Molecular Parasitology was edited

The experts of our Institute and the 2nd Military University have edited a book entitled Molecular Parasitology as the chief editors.

3.5 Other progresses

3.5.1 Chinese Journal of Parasitology and Parasitic Diseases sponsored by the Institute achieved significant progress with the influence factor of 0.429, being cited 445 times and being awarded the 1st rank in the 1st medical periodical contest launched by MOH.

3.5.2 The 6th academic board of our Institute was re-elected, and the disciplines and the members of the board were defined.

3.5.3 The Bio-safety Committee and Ethic Examination Committee have been established and relative disciplines formulated.

3.5.4 The Institute's Young Scientist Funds have been provided and regulations formulated.

3.5.5 Eight suspending pictures were collected by the Parasitology Conference of China

Preventive Medical Association and attended the 1st National Excellent Common Scientific Suspending Picture Contest, of which, malaria one got an excellent award.

3.5.6 Academic activities launched by professional academy and association affiliated to the Institute were supported, such as advanced nation-wide vector biology and control symposium, and the 2nd national medical parasitology and tropic medicine new progress meeting sponsored by the Parasitology Conference of China Preventive Medical Association. Schistosomiasis Sub-committee of China Endemic Diseases Association sponsored to hold a symposium for the discussion of schistosomiasis sustainable control strategy in China. The Shanghai Society of Parasitology held a 2004 annual academic meeting focusing on the situation of important human parasitic diseases.

4 Putting disease control and prevention as central task while accomplishing other works

4.1 Relevant staff moved out temporarily from building No.2, the laboratory building, to pave the way for laboratory decoration. The annual inventory of IPD's assets and liabilities was made.

4.2 Laboratory biosafety education and propaganda were carried out in the Institute. Special trainings on safe operation were given to laboratorial members.

4.3 Security was put in the first place for keeping away from fire and theft, and a responsibility system of the safety work and security of Building No. 2 and No. 3 while under construction was implemented, and, fire control facilities in Building No. 1, 3 and 4 were transformed.

4.4 In order to open the market of Tribendimidine, we negotiated with several manufacturers and exchanged ideas with some relevant provincial institutes.

4.5 As a national institute, we continued to play our leading role in pesticide development and research as well as diagnosis on parasitic diseases... We had finished 156 test items of drug efficacy for insecticide samples and 11 items of toxicological tests, 4 items of manufacturer supervision. Also finished were 640 items of clinical parasitological samples test, 1402 samples of serological test. We carried out general survey for schistosomiasis 3460 person-times. We had achieved new increase of income due to scientific and technological development. Our institute also cooperates with the State Tobacco Monopoly Bureau, set up the test platform, and launched toxicological test project.

4.6 We launched a training for middle level professionals. Through studying, they raised their theoretical level and enhanced the ability of management and handling affairs according to the objective laws and scientific laws, in order to meet the needs of new situations and new tasks constantly.

4.7 Graduate students' dormitories were renewed and their living conditions improved.

5 Five important affairs in 2004 were completely achieved

5.1 The Laboratory for Acute Vector-borne Communicable Diseases has been rebuilt, a biosafety level Ⅱ lab and a SPF animal model breeding lab have been in the process of construction, which is an important component of our national public health systems. It will be finished and be

used next year.

5.2 .The renovation of No.3 building had been finalized by the end of November. The Institute began to provide free working lunch to the staff by that time.

5.3 The Museum for Medical Parasitology, Entomology and Molluscology was open to public in October. It has very important meaning on publicizing health education and popularizing knowledge of parasitic diseases control and prevention.

5.4 The Director's special funds had been set up, by which a total of two hundred thousand yuan were used for the support of 3 research projects. 20 lectures covering different fields and 5 professional training courses had been given to members in 2004. With the director's special funds, we can not only form a good studying atmosphere but also improve the overall quality of the staff.

5.5 Annual physical check-up for all of the staff was organized.

Solid basis was founded for our Institute on the continuous developing road through one year's arduous work. But we should realize the existing shortcomings, particularly that the tasks for parasitic diseases control and prevention are still onerous and difficult, and rising trend of the endemicity of several parasitic diseases has not been under effective control. It is necessary for us to further reform, change the function, adjust the position, solve the conditions of the uneven business, so that every staff member can fully develop his/her ability and wisdom. After training, young colleagues have born the most burden of IPD.. However, gaps still remain for us as a national team. So strengthening the training of the talents, raising the degree of attracting the talents and reinforcing the construction of talent teams are desirable.

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KEY POINTS FOR THE WORKS OF 2005

In 2005 we should set diseases control and prevention as the central task, strengthen our abilities of parasitic diseases control and prevention and scientific research, continue exploring new areas, build a more powerful team for parasitic diseases control and prevention step by step, and further raise IPD's reputation both at home and abroad.

1. Improving the construction of team for diseases control and prevention, enhancing the abilities to diseases control and emergency treatment

As more and more attention being paid to the public health work by the State, the investment will be also much more than before. It is an opportunity but also a challenge for the workers in IPD. Each of the staff should have high responsibilities to improve our abilities in diseases control and capabilities of solving field problems. So, we should do well for the two following tasks:

Firstly, to improve the special theoritical level of the team for disease control and prevention. According to the task of diseases control and prevention assigned to IPD, we should build the mind of serving for the whole country and training a lot of technical and management

teams with high standard, and make stressed training for different levels of professionals. Meanwhile, intensified training for the young staff of IPD should also carry out in order to enhance their theoretical standard on disease control and prevention.

Secondly, providing disease control workers with more training and practising opportunities. We should take full usage of old professionals' experiences, and invite them to help in the fostering of young generations. Meanwhile, we should encourage young disease control workers to go to the field as much as possible, cultivate and train them through practice, so as to strengthen their sense of responsibility and improve their ability of conducting field work. We should also inspire the young people to build up the modest and discreet working attitudes and deal with colleagues in a harmonious way. In addition, we will improve the emergency response system, strengthen the capacity of parasitic disease control and prevention, and make them to realize their duty. As a member of national team, every staff should be prepared at any time to play their role in treating epidemic situation whenever occurs.

2. Developing international cooperation and exchange broadly, managing to elevate level on science and technology.

High quality parasitic disease control and prevention work lies in high level science and technology. Aiming at current situation of parasitic disease prevention and treatment, in 2005, our Institute will further strengthen the force of our science and technology relying on the elevation of science and technology level through perfecting the development of all subjects. Thus, we should manage to accomplish those applying researches such as national tenth five-years' key project to service for the parasite disease prevention and control. On the other side, we should also enhance those applying basic science researches and applying researches such as national 863 Hi-Tech Plan and international cooperation program, for instance, the Global Funds and TMRC, acquiring new technology, creative methods and innovative measures applying to pilot work.

Moreover, we will step forward international cooperation and exchange vigorously, hold all sorts of international symposiums and provide training courses, make our Institute better-known through great developments. Besides, we will participate in international competition actively and strive hard to apply for international cooperation projects.

We should integrate the advantages of our Institute and strive for more projects. All of the staff should have the courage to keep forward when in adversity and win their way to succeed. We will award heavily those who bring home the bacon..

3. Rebuilding the laboratory for Actue Vector-borne Communicable Diseases and strengthening the biosafety management of the laboratory

To quicken the rebuilding of the laboratory for acute vector-borne communicable diseases and fitting up the whole laboratory in 2005, new equipments will come into operation. At the same time, a SPF grade laboratory for seeds conservation of experimental animal and a biosafety level 2 (BL2) laboratory will be built up. The experimental condition in our Institute will be

improved in an all-round way when the time comes. Accordingly, the scientific research and ability will be promoted, which helps to meet an urgent need to react to the national public health accident. Meanwhile, we must strengthen safe consciousness and the biosafety management of the laboratory, institutionalize check and supervision, pinpoint the problems to rectify and improve in time. The staff should study the relevant rules and regulations seriously, observe the managerial regulations of the biosafety laboratory consciously, promote one's work according to the operational procedure and technical specification strictly, and also enhance self-protection consciousness with the rigorous scientific attitude.

4. Achieving other goals by taking emphasis on the central task of the Institute

4.1 With rebuilding the laboratory for acute vector-borne communicable diseases, it should be taken to check inventory of property, make an accounting of funds, register state-owned assets in time, and find out the resources.

4.2 To strengthen safety management of the houses for those have already been hired out and handle affairs according to the contract strictly.

4.3 A series of academic activities will be held to celebrate the 55th anniversary of the Institute, carry forward the glorious tradition of the Institute, to promote the academic atmosphere, strengthen the academic exchanges and cooperation between the scientists of the same fields both at home and abroad, to show the achievement gained in scientific research and disease control in the past 55 years, to develop the Institute's undertaking, and to expand our influence both at home and abroad.

4.4 In order to meet the needs of disease control and prevention and the situation of scientific and technical development, our Institute will continue paying close attention to talents' training, pay constant attention to institutionalizing this job all the year round. We will make the plan of training according to the need this year, so that the vast disease control, scientific research and administrative staff can grasp the new concept and new knowledge in time, expand their sight.

4.5 After implementing special allowance rules, we will strengthen management according to the post request and assessment criteria, enhance the staff's working sense of responsibility and efficiency, According to the needs of work, we will also form the new incentive mechanism.

4.6 To develop scientific and technological work further, strengthen self-improvement function and strive to attain new steps in both development and income increase.

4.7 To fulfill reelection of the members of the Expert Advisory Committees, Ministry of Health, which are affiliated to our Institute and create conditions for showing the talent of young and middle-aged experts.

4.8 To strengthen the management of key laboratory of parasite biology and vector biology of MOH, and reelect the Academic Board of the Institute . To expand the opening of the key laboratory actively and promote cooperation and exchange .

5. Six important affairs need to be implemented in 2005

5.1 To finish the rebuilding project on the laboratory for acute vector-borne communicable

diseases this year.

5.2 To finish the environment optimization project, upgrade some underground pipeline, renew the place level ground, rebuilt garden, renovate environment, all these will change completely the appearance of the Institute and create a good working atmosphere for our scientists.

5.3 To finish the construction of information platform in the Institute, build up a 20-trillion-broadband access, a 300-extreme point LAN system and a computer room, renew the inner telephone system, design and finish the webpage with characteristic, keep up with the paces of information age, and improve working efficiency.

5.4 To fulfill the project of rigging up one pair of ways entering electricity, guarantee the important instrument supplies' power without stopping.

5.5 To found the "workers' home" up to the standard of Shanghai Medical Trade Union, offer the places of the recreation and fitness to workers in order to increase cohesiveness.

5.6 To carry out physical examination of those on special working post, risk-post technical staff and female workers in the year.

At the new starting point of the year, we should deepen the reform in the Institute to promote further development.

§2. 疾病控制与科研工作

疾病控制

1　血吸虫病——预防为主，面向基层

1.1 深入血吸虫病疫区，对血防工作进行明察暗访；

1.2 完成第三次全国血吸虫病流行病学抽样调查工作；

1.3 配合卫生部实行的急性血吸虫病疫情报告制度，　对血吸虫病疫情进行汇总、分析、预测；

1.4 参加卫生部、全国人大组织的江西、湖北省考察调研血吸虫病防治专题工作；

2　疟疾防治——以点带面，坚持不懈，卓见成效

2.1 全球基金疟疾控制项目进展顺利，得到了全球基金项目官员的好评；

2.2 赴疟疾重流行区云南省和海南省开展现场调研与督导工作；

2.3 在疟疾流行区现场开展蚊媒调查工作；

3　丝虫病、黑热病、包虫病防治工作——点面结合，开创新局面

3.1 全面推动各省丝虫病监测和抽样调查工作，为 2005 年消除淋巴丝虫病验收工作作好准备；

3.1.1 完成了重点地区流动人口丝虫病抽样调查工作；

3.1.2 完成了对山东、江苏、江西省消除丝虫病的省级预审和审评工作；

3.1.3 完成了消除丝虫病标准的修改和审定工作；

3.1.4 开展了丝虫病重点地区中小学生尿液抗 IgG4 抗体的检测工作；

3.1.5 召开了全国实施《消灭丝虫病地区监测方案》经验交流会；

3.1.6 协助和安排 WHO 专家组对我国消除丝虫病工作的考察；

3.2 加大黑热病、包虫病防治工作力度，有效控制疫情的回升；

3.2.1 开展了动物源型黑热病流行区卫生宣教与防治试点；

3.2.2 考察了新疆喀什黑热病高发流行区；

3.2.3 完成了包虫病防治工作试点的现场调查工作；

4　其他寄生虫病——全国人体重要寄生虫病现状调查圆满完成。

4.1 完成 2 万余份血清学复测工作；

4.2 数据库验收和数据统计分析工作进展顺利；

4.3 召开全国人体重要寄生虫病现状调查总结工作会；

4.4 组织中外专家对全国人体重要寄生虫病现状调查报告进行论证；

5　贯彻预防为主，加强寄生虫病防治、管理和监测能力

5.1 建立健全寄生虫病防治管理信息系统与疾病控制与应急管理机制；

5.2 组织专家配合卫生部制定了《全国血吸虫病防治中长期规划纲要》、《全国血吸虫病综合治理规划纲要》等重要文件；

5.3 组织专家修订了《血吸虫病重大疫情应急处理预案》；

5.4 编辑印发《寄生虫病预防控制信息》;
5.5 完成疟疾、血吸虫病的监测方案的编制;

1 科研工作

1.1 科学研究

1.1.1 在研课题 20 项概况:

纵向重点项目占 40%，国际合作项目占 50%，其他渠道来源的项目占 10%。应用研究、应用基础研究和开发研究分别占 81%、14%和 5%。血吸虫病、疟疾、利什曼病、其他蠕虫病、其他原虫病及其他寄生虫病分别占 42%、13%、5%、30%、5% 及 5%。

按计划完成课题 6 项。

1.2 成果

1.2.1 抗肠道线虫一类创新药三苯双脒获新药证书

1.2.2 “中国并殖吸虫分类与遗传变异”进行成果鉴定

1.3 项目验收

1.3.1 科技部中央院所社会公益研究资助项目**“**中国西部地区包虫病和黑热病的分布调查研究**”、“**长江流域典型环境改变对血吸虫病传播的影响”以及基础工作资助项目“中国人体寄生虫及媒介标本收集、整理和保存”通过专家验收评价为优良。

1.4 论文

投送论文 40 篇。发表论文 52 篇，其中在 SCI 收录的专业期刊发表 6 篇，国外专业期刊发表 4 篇。

1.5 申请课题与立项:

1.5.1 科技人员 17 人次向国内外 17 个渠道申请科研课题 34 项, 已知 12 个渠道 28 个申请项目中有 16 项获得批准，获得经费首次突破千万元。

1.5.2. 本所中青年科学基金首次招标，申请 4 项、中标 3 项。

1.5.3 “十五”国家科技攻关计划“3+2”项目经评审继续获得资助 2 项：生态环境变化对血吸虫病流行态势的影响及干预措施的研究； 嗜人按蚊地区疟疾流行潜势及控制爆发流行的研究。

1.5.4 “863”计划“3+2”项目 “日本血吸虫基因工程疫苗的研究” 经评审继续获得资助。

2 教育与专业培训

2.1 研究生培养

2.1.1 在读研究生 33 名，其中博士生 9 名；新招收研究生 10 名，其中博士生 3 名；毕业并获硕士学位 4 名。

2.1.2 博士论文“日本血吸虫雌、雄虫 cDNA 文库的构建及基因表达谱的建立”被推荐参加全国优秀博士学位论文评选。

2.1.3 为 2003 级硕士生和 2004 级博士生开设寄生虫学专业基础课及寄生虫学专业英语课。

2.2 职工继续教育与专业培训

2.2.1 举办学术报告和专题讲座 20 次。

2.2.2 攻读硕士、博士学位的研究生 33 名。

2.2.3 15 名职工参加成人继续教育的专业学习。

2.2.4 出国短期培训青年科技人员 1 名。

2.2.5 举办“公共卫生政策与条例学习班”、“实验室安全培训班”及“实验室安全专项培训班”（有照片）

3 对省级疾病预防控制机构人员专业培训

3.1 接受专业进修人员 2 名

3.1.1 举办全国培训班：

《慢性丝虫病社区关怀和照顾方法培训班》、《全国媒介按蚊调查与新技术培训班》、《血吸虫病防治策略研究进展培训班》、《第三次全国血吸虫病流行病学抽样调查血清学、病原学调查培训班》。

4 学术活动与学术团体

4.1 完成学术委员会换届，举行第六届学术委员会第一次会议。

第六届学术委员会名单：主任委员：汤林华　　副主任委员：刘述先、周晓农

委员：冯　正、刘德全、余森海、吴惠敏、许隆祺、郑　江、倪奕昌、邱持平、曹建平、许学年、郭家刚、伍卫平、周水森、汪俊云、陈家旭、官亚宜、张皓冰、朱　丹、陈颖丹

4.2 中华预防医学会医学寄生虫分会举行“全国媒介生物学与控制高级研讨班”(2004 年 10 月 10 日-12 日，南京)、“全国第二届医学寄生虫学与热带医学研究新进展研讨会”（2004 年 8 月 16-19 日，广州）、与中国地方病协会血吸虫病专业委员会联合举办“全国血吸虫病可持续发展的防治策略研讨会”（2004 年 11 月 22-25 日，芜湖）。

4.3 负责组织举办“上海市寄生虫学会 2004 年学术年会暨重要人体寄生虫病现状调查总结会”（2004 年 10 月 29 -30 日，上海金山）。

5 编辑出版工作

5.1 与卫生部共同主办的《中国寄生虫学与寄生虫病杂志》在中国科学技术信息研究所出版的 2004 年版《中国科技期刊引证报告》中影响因子为 0.429，总被引频次为 445，他引率 71%，在同类期刊中名列前茅并获卫生部首届医药卫生优秀期刊获一等奖。

5.2 编印《上海市寄生虫学会 2004 年学术年会论文摘要汇编》。

5.3 编印《抗肠道线虫新药三苯双脒论文汇编》。

6 科技咨询服务，健康教育

6.1 完成卫生杀虫剂样品的药效学测试 156 项、毒理学测试 11 项，产品监制 4 项。

6.2 检测临床病原学送检标本 640 份，血清学标本 1402 份，血吸虫病普查 3460 人次。

6.3 人体寄生虫和媒介标本馆于 2004 年 10 月 28 日正式开放。

6.4 完成中国人体寄生虫及媒介标本资源共享数据库。

6.5 《防疟保健康，共同奔小康》获首届全国优秀科普挂图征集评选活动优秀奖。

§2. DISEASE CONTROL& SCIENTIFIC RESEARCH IN 2004

DISEASE CONTROL

Disease control

1 Schistosomiasis --- putting emphasis on prevention, targeting at the grass roots

1.1 Experts were dispatched to endemic areas to investigate local schistosomiasis control work either publicly or privately;

1.2 The third nation-wide epidemiological sampling survey on schistosomiasis was accomplished;

1.3 After collecting epidemiological data, analysis and prediction were carried out according to the reporting system for acute schistosomiasis formulated by the MOH;

1.4 Involving in the special investigation and research on schistosomiasis in Jiangxi and Hubei provinces organized by MOH and the Standing Committee of the National People's Congress.

2 Malaria -- choicely, persistently and effectively

2.1 The project of malaria control supported by the global funds went on smoothly and got praise from the officials of the global funds project;

2.2 Visits to Yunnan and Hainan provinces where malaria endemicity was severe for field survey, research and supervision were carried out;

2.3 Investigation on mosquitoes in malaria endemic areas.

3 Filariasis, leishmaniasis and hydatidosis --- starting a new phase by means of pilot in combination with area study

3.1 The surveillance and sampling survey on filariasis went on well which paved the way for the elimination of lymphatic filariasis in 2005;

3.1.1 The filariasis sampling survey among floating population in areas of endemic importance was accomplished;

3.1.2 Pre-evaluation on the elimination of filariasis in Shandong, Jjiangsu and Jiangxi provinces was carried out;

3.1.3 The of criteria of filariasis elimination were revised;

3.1.4 Anti-IgG4 antibody detection in the urine among local primary and middle school students in formerly major filariasis endemic areas was carried out;

3.1.5 A national forum for communication on the application of 'surveillance program in filariasis elimination areas' was lunched;

3.1.6 Assistance was provided to the WHO Expert Advisory Panel on Filariasis to supervise the work of filariasis elimination in our country.

3.2 The control and prevention on leishmaniasis and hydatidosis were strengthened, and the

re-emergence of the diseases was under control;

3.2.1 Health education and pilot study in disease control in animal leishmaniasis endemic areas were implemented;

3.2.2 High endemic areas for leishmaniasis at Keshen District in Xinjiang Uygur Autonomous Region were reivewed;

3.2.3 Pilot field investigation in areas undergoing hydatidosis control was accomplished.

4 Other parasitic diseases -- The nation-wide survey on important human parasitic diseases was fulfilled

4.1 More than 20 000 cases were followed up with serologic technique;

4.2 Database examination and statistical analysis on data went on smoothly;

4.3 A summing up meeting on the nation-wide important human parasitic diseases survey was held;

4.4 A meeting for the verification of the report on the ‘nation-wide important human parasitic diseases survey’ was held with experts both at home and abroad.

5 Putting emphasis on prevention and strengthening parasitic diseases control, management and surveillance

5.1 Setting up and improving information management system and the sudden events management system for parasitic diseases control and prevention;

5.2 Experts were organized to assist the MOH to formulate: 1) national middle- and long-term program for schistosomiasis control and prevention, 2) national comprehensive management program for schistosomiasis control;

5.3 Revision of the ‘sudden events management program for serious schistosomiasis epidemic’ by experts;

5.4 “Newsletter on the control and prevention of parasitic diseases” was edited and published;

5.5 The surveillance program for malaria and schistosomiasis was finalized.

1 Research

1.1 Projects

There were 20 ongoing projects in 2004, and among them, 40% were national ones, 50% were international collaborative projects and the remaining 10% were local ones. These 20 projects can be categorized upon various classifications. In terms of parasitology, the proportions were: schistosomiasis 42%, malaria 13%, leishmaniaisis 5%, other helminthiases 30%, other protozoa 5% and other parasitosis 5%. In terms of disciplines, the proportions were: applied research 81%, applied basic science 14% and developing research 5%. Six out of the 20 projects had been accomplished by the end of 2004.

1.2 Achievements

1.2.1 A certificate was granted to tribendimicine..

1.2.2 The project “Study on genetic diversity of *Paragonimus* in China” was appraised.

1.3 Evaluation

Projects supported by the Ministry of Science and Technology, namely, "Survey on the distribution of leishmaniasis and hydatidosis in the western part of China", "The impact of environmental changes in the Yangtze River valley on schistosomiasis transmission" and "Collection, processing and conservation of specimen of human parasites and vectors in China" were evaluated as excellent.

1.4 Papers

43 papers were published, and among them, 8 were published in the journals cited by SCI and 4 were published in foreign scientific journals.

1.5 Funds Application

17 professionals applied 34 projects, and among them 16 were granted. The total granted funds exceeded 10 million RMB yuan, which is for the first time in the IPD's history.

2 Postgraduate education & continuing education for staff member in the Institute

2.1 Postgraduate Education

2.1.1 33 postgraduate students did their degrees in the Institute. Among them 9 were PhD candidates. Seven master degree candidates and 3 doctorial students were enrolled. Four acquired their master degree in 2004.

2.1.2 One PhD's thesis entitled "Construction of cDNA libraries from male and femaile adult worms of *Schistosoma japonicum* and establishment of gene expression profile" was submitted for competition and a national championship of excellent doctorial theses was provided.

2.2 Further education for staff member

20 scientific presentations were given to all the professional staff in the Institute and a higher degree was appraised to 15 staff.

A young professional staff was sent abroad for short-term training.

3 Refresher technical training for provincial staff

3.1 Two vocational training courses were provided to provincial health workers by the Institute.

3.2 Four refresher training courses focusing on malaria, schistosomiasis and filariasis were held respectively for provincial health workers.

4 Scientific meetings

4.1.1 The academic committee board of the Institute was re-elected. The director of IPD, Prof. Tang Linhua, was elected as chairman.

4.1.2 Three nationwide workshops were organized by the Institute, namely, the advanced course on vector control (Oct. 10-12, 2004, Nanjing), The second meeting on progress in parasitology and tropical medicine (Aug. 16-19, 2004, Guangzhou), and sustainable control strategy for schistosomiasis (Nov. 22-25, 2004, Wuhu).

4.1.3 Annual meeting of Shanghai Society of Parasitology and of the report on survey of human parasitic diseases, 2004 was held on Oct. 29-30 in Shanghai.

5 Editorial Activities

5.1 According to the statistics of "Chinese Journal Citation Reports" (2004 edition), the impact factor of "Chinese Journal of Parasitology and Parasitic Diseases", which is edited and published by the Institute, was 0.429. The total times of citing of the journal was 445, and among them, cited by other journals reached 71%.

5.2 "Abstracts of scientific papers of the Shanghai "Society of Parasitology, 2004" were compiled and published.

5.3 Relevant papers on Tribendimidine exploration and development were compiled and published.

6 Health detection and consultation

6.1 156 samples of insecticide were tested with pharmacodynamic measure and 11 samples of insecticide were detected for its toxicity by the Institute. Four manufactures were supervised by the Institute.

6.2 640 samples were sent to the Institute for parasitological examination and 1402 samples for serological test. Specimens from 3460 persons were examined for schistosomiasis.

6.3 The museum for medical parasitology, entomology and molluscology set up by the Institute, was open to the public on Dec. 28, 2004.

6.4 The construction of Chinese database of medical parasitology, entomology and molluscology was completed and the database has been shared with the public.

6.5 A prize was awarded for the poster on raising people's awareness to prevent malaria,designed by the Institute, in the national competition for excellent science popularizing posters.

§3. 外事工作

1 国际往来

1.1 来访　本年度共接待外宾 32 批 110 人次，分别来自澳大利亚、韩国、朝鲜、日本、法国、美国、英国、瑞典、柬埔寨、印度尼西亚、意大利、巴西、新西兰、马来西亚、老挝、泰国、菲律宾、越南、德国、加拿大、印度、以色列、爱尔兰及中国香港、台湾等 25 个国家和地区。

1.2 出访　全年出访 30 批，38 人次。分赴日本、美国、马来西亚、英国、肯尼亚、马达加斯加、喀麦隆、瑞士、泰国、菲律宾、韩国、越南、老挝等国家及我国香港、澳门、台湾地区。

1.3 合作研究　吴晓华赴丹麦血吸虫病实验所进行“血吸虫病 GIS 预测系统研究”的合作研究，为期 10 个月。

2 国际会议与培训班

本年度共举办或承办国际会议 2 个、研讨会 1 个。

2.1 亚洲疟疾培训网络（亚网）理事会暨理事会—合作组织年会于 6 月 8 日—10 日在上海举行，本次 2004 年会为期三天。我国为本届理事会协调主席国，本所汤林华所长任协调国主席。来自柬埔寨、中国、印度尼西亚、老挝、马来西亚、菲律宾、泰国和越南等理事国的代表 16 人及 WHO / WPRO　WHO/SEARO（东南亚办事处）、WHO/RBM（大湄公河流区域遏制疟疾项目）、美国国际开发署、英国疟疾协会、美国疾病预防控制中心、亚洲开发银行、WHO 驻马来西亚、泰国办事处、越南边境疟疾防治项目、美国药典以及北京华立科泰制药有限公司、昆明制药有限公司、新加坡宾杰有限公司等合作组织的代表 23 人出席了大会。

2.2 受卫生部国际合作司及世界卫生组织西太区（WHO/WPRO）委托，由我所承办的“东亚区域间疟疾控制专题会议”于 11 月 29 日—12 月 2 日在上海举行。来自中国、朝鲜和韩国等三国的 17 位代表及世界卫生组织（WHO）、WHO/WPRO、WHO/SEARO（世界卫生组织东南亚区办事处）的官员、临时顾问等 18 人出席了大会。

2.3 研讨会　为申请全球基金疟疾项目，特地邀请 WHO/WPRO 三位疟疾项目官员于 11 月 4-6 日在上海举办了“全球基金中国疟疾项目第五轮申请研讨会”，为期 3 天。来自卫生部、我所及云南、海南、安徽、湖北、河南、江苏和山东等 7 个疟疾流行省的 19 位专家参加了研讨会。

3 国际合作

3.1 在研项目

共 9 项，其中瑞典全球基金项目 1 项、美国 2 项、世界卫生组织西太区 2 项、英国 2 项、菲律宾 1 项及欧共体 1 项。

3.2 国际项目申请

本年度共向 WHO/TDR、瑞典全球基金、韩国国际协力团基金项目、日本合作等申请科研项目及合作课题 4 项。

§3. FOREIGN AFFAIRS

1 Exchange visits

1.1 A total of 110 person-times in 32 batches of foreign guests from 25 countries and areas, including Australia, South Korea, DPR Korea, Japan, France, United States of American, United Kingdom, Switzerland, Cambodia, Indonesia, Italy, Brazil, New Zealand, Malaysia, Lao PDR, Thailand, Philippines, Vietnam, Germany, Canada, India, Israel, Ireland, and Hong Kong, Taiwan of China, visited the institute.

1.2 A total of 38 person-times of 30 batches of staff visited foreign countries, including Japan, United States of American, Malaysia, Switzerland, Thailand, Philippines, South Korea, Vietnam, Cambodia, Indonesia, Italy, Australia, Germany, and Egypt for attending meetings or advanced study.

1.3 Collaborative study. Dr Wu Xiao-hua had been sent to carry out the collaborative study on "Forecast system on prediction of schistosomiasis transmission by using geographic information system" in the Danish Bilharziasis Laboratory, Denmark for ten months.

2 International conferences and workshop

Two international conferences and one workshop were held in 2004.

2.1 Annual Meeting of Executive Board (EB) and EB-partner on Asia Collaborative Training Network for Malaria (ACT Malaria) was held in Shanghai on June 8-10, 2004. Prof. Tang Lin-hua, Director of the National Institute of Parasitic Diseases, was the Coordinating Country Director (CCD) of the ACT Malaria Executive Board (EB), for the second year. A total of 39 participants and partners from EB countries and cooperation organizations including EB members, Cambodia, China, Laos, Malaysia, the Philippines, Thailand, Indonesia and Vietnam, and partners from WHO, WHO/WPRO, WHO/SEARO, WHO/HTM/RBM, Division of Parasitic Diseases, CDC, USA, Beijing Holley-Cotec Pharmaceuticals Co. LTD, and others, participated in the meeting.

2.2 Entrusted by WHO/WPRO, WHO/SEARO and China MOH, the bi-regional meeting for control of malaria in East Asia was held on November 29-December 2, 2004, Shanghai. Seventeen participants from China, North Korea, South Korea and Vietnam and 18 Officers, temporary advisors and observers from WHO, WHO/WPRO, WHO/SEARO, representative Office of WHO (Beijing & Pyongyang) attended the meeting.

2.3 To prepare the proposal for the 5th round Global Fund to Fight against AIDS, Tuberculosis and Malaria (GFATM), three experts from WHO/WPRO were invited to assist at the Planning Workshop to prepare the proposal for the 5th round of the GFATM on November 4-6, 2004. Nineteen experts or participants from MOH, the National Institute of Parasitic Diseases, China CDC, and from Yunnan, Hainan, Anhui, Hubei, Henan and Jiangsu provinces attended the workshop.

3 International collaboration

3.1 Ongoing projects

A total of 9 international collaborative projects had been done this year, of which, one was with Global Fund to Fight against AIDS, Tuberculosis and Malaria, two with USA, two with WHO/WPRO, two with UK, one with the Philippines and one with European Economic Community (EEC).

3.2 Application of international collaborating projects

Four proposals were submitted to WHO/TDR, Global Fund to Fight against AIDS, Tuberculosis and Malaria, to the Korea International Cooperation Agency (KOICA) and to Japan for funding this year.

§4. 研究论文摘要

血吸虫病

中国血吸虫病流行现状分析

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[目的] 分析近 5 年来中国血吸虫病流行趋势及疫情变化的特点。**[方法]** 收集血吸虫病流行历史资料及近年流行区疫情报告资料，比较分析 1998 年后全国血吸虫病流行趋势和疫情回升特点。**[结果]** 2003 年底报告资料显示，与建国初期相比，全国流行省、县、乡镇分别减少了 42%、40%和 53%；血吸虫病估计病例数较建国初期减少了 92.74%；钉螺面积减少了 73.56%。但全国推算慢性血吸虫病例数徘徊在 80 万左右，急性感染报告数以年平均 25%上升；1998 年以来钉螺面积净增加 31 321.5 万 m^2，全国 7 省 20 个纵向监测点内，30%、70%和 35%监测点的人群、耕牛和钉螺的感染率分别出现上升趋势。湖区 5 省中有 38 个达到血吸虫病传播控制和传播阻断标准县（市、区）疫情分别出现了明显的回升，湖南省 6 个非疫区（株洲市 3 个、长沙市 2 个、桃源县 1 个）新发现钉螺，长沙市桔子洲头等 16 个州滩均有钉螺，并发生急性感染；已阻断传播地区如上海、浙江、福建等省市也发现大面积钉螺。长江中下游沿江的大中城市相继发现感染性钉螺和新发病例。**[结论]** 近年来长江中下游地区局部血吸虫病流行区疫情回升明显，回升原因有环境生态变化、社会经济变化及预防控制力度变化等因素的影响。

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紫外线致弱童虫免疫家兔血清筛选日本血吸虫成虫 cDNA 文库*

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[目的] 用致弱疫苗免疫血清、感染血清筛选文库获取新的日本血吸虫特异性未知抗原基因。**[方法]** 用紫外线致弱童虫免疫兔血清、感染血清免疫筛选日本血吸虫成虫 cDNA 文库，对阳性重组子进行克隆、测序，利用软件对核酸序列进行分析，确定目的基因。**[结果]** 筛选出 6 种蛋白分子基因：3-磷酸甘油醛脱氢酶(GAPDH)，丝氨酸蛋白酶抑制剂(serpin)，线粒体编码蛋白，肌球蛋白(myosin)部分重链基因以及两个未知新基因。**[结论]** 紫外线致弱疫苗免疫血清筛选 cDNA 文库为寻找新的抗血吸虫病疫苗提供了又一途径。

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中国血吸虫病传播控制和传播阻断地区疫情回升情况分析

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[目的] 分析中国血吸虫病传播控制和阻断地区部分区域疫情回升的原因。**[方法]** 手机 1999-2003 年全国血吸虫病疫情统计资料和部分疫情回升县的基本情况，采用回顾性研究方法，对资料进行相关分析。**[结果]** 16 个血吸虫病传播阻断县、21 个血吸虫病传播控制线疫情回升，分别占全国传播阻断县、传播控制县数的 6.15%、33.3%，另有 1 个传播阻断农场疫情回升。6 个县（农场）仅出现螺情回升，32 各县病情、螺情均出现了回升。1999-2003 年现有病例数、急性血吸虫病例数、钉螺面积、病牛数等指标呈上升趋势。**[结论]** 受洪涝灾害、水系灌溉、投入下降、思想麻痹等自然、社会和生态因素影响，达标地区疫情出现反复，应加强对传染源和钉螺扩散源头的管理和监测工作，尤其是传播控制地区。

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蒿甲醚对曼氏血吸虫的作用：剂量与效应的关系和虫的形态学和组织病理学的变化

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[目的] 应用感染曼氏血吸虫(利比里亚株)的小鼠观察蒿甲醚单剂量与效应的关系，虫体肝移及蒿甲醚所引起的虫的形态学和组织病理学变化。**[方法]** 感染 21 d 童虫的小鼠一次口服蒿甲醚 12.5 mg/kg 至 600 mg/kg 不同剂量，治后 28 d 剖检观察各组虫数。感染 46 d 或 70 d 成虫的小鼠一次口服蒿甲醚 400 mg/kg 后 8～14 d，观察虫体肝移及其形态和组织病理学变化。**[结果]** 蒿甲醚对 21 d 童虫的最低有效剂量为 200 mg/kg，减虫率为 81%。用蒿甲醚治疗后 8 h 成虫开始肝移，3～7 d 全部肝移，14 d 有 31%的虫返回肠系膜静脉。成虫虫体萎缩，咽部扩大，肠管膨胀及其色素减少。雌虫局部体表受损,白细胞附着，卵巢及卵黄腺变性退化，以及雄虫睾丸萎缩等。在肝内的虫体被嗜酸粒细胞为主的炎细胞包围和浸润。**[结论]** 蒿甲醚对小鼠曼氏血吸虫 21 d 童虫的最低有效剂量为 200 mg/kg，可引起曼氏血吸虫成虫萎缩、退化或死亡。在肝内受损的虫体主要是被嗜酸粒细胞包围和侵袭所致。

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气候变暖对中国血吸虫病传播影响的预测**

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[目的] 预测气候变暖对中国血吸虫病传播影响的程度及范围。**[方法]** 利用全国 193 个气象站 1951～2000 年的气象数据资料，建立地理信息系统(GIS)气象数据库，分析全国

日均温度变化趋势。利用已建立的钉螺和日本血吸虫有效积温(SDT)模型的结果，构建全国不同地区血吸虫病气候-传播模型，计算各地钉螺和日本血吸虫年有效积温(ET)，并应用GIS 等技术比较分析 ET/SDT 比值的时空分布。以 2030 年和 2050 年我国平均气温将分别上升 1.7℃和 2.2℃为依据，预测未来全国血吸虫病流行区的扩散趋势和高危地带。**[结果]** 建立了全国血吸虫病气象 GIS 数据库，在以前的 50 年中全国平均温度略呈上升趋势，尤其在上世纪 90 年代后上升趋势明显，回归方程为 T 年平均=0.0198X-28.476.构建了血吸虫病气候-传播模型，钉螺和日本血吸虫的 ET/SDT 的比值随年代略呈上升趋势,日本血吸虫的潜在分布区域大于钉螺潜在分布区域。2030 年和 2050 年血吸虫病潜在传播区域预测分布图显示，血吸虫病流行区将明显北移，2050 年血吸虫病潜在流行的敏感区域较 2030 年的明显扩大。**[结论]** 血吸虫病潜在流行区将随气候变暖出现北移，北移敏感区域是今后我国流行区北界线的监测工作重点。

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T 载体的构建及日本血吸虫肌动蛋白基因 PCR 产物的快速克隆*

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[目的] 构建快速高效克隆 PCR 产物的克隆载体(T 载体)并对日本血吸虫肌动蛋白全长编码基因 PCR 产物进行快速克隆。**[方法]** 日本血吸虫肌蛋白全长编码基因的扩增采用反转录-聚合酶链反应(RT-PCR)方法。质粒 pGEM5Zf (+)经限制性内切酶 EcoR V 酶切，在仅含有脱氧胸苷三磷酸(dTTP)的 PCR 缓冲液中于 70 ℃作用 2 h，在每个片段的 3'端加上一个脱氧胸苷(dT)碱基，构建成 T 载体.根据 PCR 扩增产物 3'端存在一个非模板依赖的脱氧腺苷(dA)原理，将扩增产物直接克隆入 T 载体并测序。**[结果]** 阳性克隆经琼脂糖凝胶电泳、限制性酶切分析、PCR 及 DNA 序列测定等均证实克隆获得成功，且效率很高。与曼氏血吸虫肌动蛋白比较，核苷酸和推断的氨基酸的同源性分别是 92.5%和 99.7%。**[结论]** 构建的 pGEM5Zf-T 载体对日本血吸虫肌动蛋白编码基因的 PCR 产物直接克隆既经济、简便,又快速、高效，所构建的 T 载体由于在插入位点两侧具有 pUC/M13 测序引物序列，可直接测定重组质粒中插入片段的核苷酸序列。所获得的日本血吸虫(大陆株)肌动蛋白编码基因与曼氏血吸虫有极高的同源性。

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地理信息系统（GIS）用于江苏、安徽和江西省血吸虫病流行预测的研究

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[目的] 利用气象参数建立模型来预测长江下游血吸虫病流行情况。**[方法]** 建立基础地

理信息系统，收集江苏、安徽和江西生以及周边地区各气象站数据，采用 Malone 氏血吸虫传播指数公式，计算各地血吸虫传播指数。采用 ArcView3.2 软件的空间分析方法，根据各观察站点的传播指数的高低，以不同颜色在不同空间、时间上表示适合血吸虫生长发育传播强弱的区域，并合成传播月份血吸虫传播生长期复合图。取 1995 年 AVHRR 卫星遥感片资料，按 4 个季节制成复合图，将各季节的传播指数和 NDVI 载 ArcView3.2 软件进行叠加分析。将选取的观察点实际血吸虫病流行情况按流行程度和流行与否，与预测结果进行等级相关性检验，以判别相关吻合程度。**[结果]** 血吸虫传播指数的大小与流行程度密切相关。**[结论]** GIS 技术可以作为血吸虫病分布、流行程度的监测和预测工具。

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三峡库区可能传播血吸虫病的危险因素及其防制对策

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[目的] 掌握三峡库区可能传播血吸虫病的危险因素并提出相应的防制对策。**[方法]** 采用流行病学、免疫学和现场调查相结合的方法，调查三峡库区流动人口、库区移民和家畜血吸虫病传染源可能输入库区的潜在危险因素。运用钉螺生态学的方法，观察钉螺在模拟环境中的生存繁殖状况，并提出防治血吸虫病传染源和钉螺可能输入库区的对策和措施。**[结果]** 从库区流动人口来自血吸虫病疫区的 175 人中，查出 1 例间接血凝试验（IHA）和环卵沉淀试验（COPT）均阳性者。通过 2 个年度的观察，肋壳钉螺和光壳钉螺都能在模拟环境中生存、繁殖。**[结论]** 血吸虫病传染源已扩散到库区，一旦钉螺输入到库区，将会构成血吸虫病在库区流行。为及早杜绝隐患，提出了相应的防范措施和对策。

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日本血吸虫幼虫寄生对钉螺生存影响的研究**

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[目的] 了解日本血吸虫病幼虫寄生对湖北钉螺生存的影响程度。**[方法]** 采集安徽贵池江滩无血吸虫感染的钉螺，在室内进行人工感染，将获得的感染性钉螺和对照组阴性钉螺同时放回现场环境饲养，每间隔 10d 观察钉螺生存情况，记录不同时间钉螺的存活率和死亡率，用动物生存寿命表法计算钉螺被血吸虫寄生后在现场环境中期望生存时间的变化。**[结果]** 在现场自然环境中，有血吸虫寄生钉螺的死亡率高峰为 60-70d 时间段，推算期望生存时间为 63.46d，最长生存时间为 135d；无血吸虫高峰钉螺的死亡高峰为 80-90d 时间

段，推算期望生存时间为 83.54d，最长生存时间为 155d。感染了血吸虫的钉螺比无血吸虫感染的钉螺期望生存时间缩短了 24.04%。**[结论]** 感染了血吸虫的钉螺在自然环境中的死亡率增高，生存时间缩短。

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疟疾

洪涝灾害遥感资料用于疟疾和流行性乙型脑炎疫情分析

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[目的] 借助遥感资料研究洪涝灾害中疟疾、流行性乙型脑炎的流行规律。**[方法]** 采用描述性分析方法对 1998 年江西省洪涝灾害遥感淹没面积资料进行分析，依据确定的灾区县界定分级标准对江西省洪涝灾区进行分类，以 1998 年的发病率比较前五年发病率中位数值、1997 年的发病率和 1999 年的发病率升降幅度为指标对洪涝灾害疟疾、流行性乙型脑炎疫情进行分析。**[结果]** 遥感淹没面积呈正偏态分布(t 检验与 W 检验 $P<0.05$)，取遥感淹没面积中位数值并参照现场流调结果确定灾区县界定分级标准：遥感淹没面积大于等于 10 万亩的灾区县属一类灾区；小于 10 万亩的灾区县属二类灾区；遥感资料未显示淹没面积的上报灾区县属三类灾区；其余县属于非灾区。1998 年江西省疟疾疫情处于历史一般水平；与 1997 年比较，一类、二类、三类灾区疟疾发病率分别上升 111.61%、97.50%、43.63%，疟疾发病率上升幅度与遥感淹没面积呈正相关(Rs=0.893, $P<0.05$)；1998 年非灾区流行性乙型脑炎发病率较 1997 年上升 252.03%。1999 年非灾区疟疾发病率较 1998 年上升 83.39%；1999 年各类灾区流行性乙型脑炎发病率均较 1998 年上升。**[结论]** 借助遥感淹没资料可以实现疟疾、流行性乙型脑炎疫情的分级分析。

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蒿甲醚与瑞香素伍用对感染伯氏疟原虫小鼠的治疗作用*

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[目的] 研究蒿甲醚与瑞香素伍用（A+D）对感染伯氏疟原虫 ANKA 株小鼠的疗效及其联合作用方式。**[方法]** 按“四天抑制法”d_0 感染，d_0～d_3 给药，每天 1 次，d_4 涂薄血膜检查，并计算 d_4 减虫率及各药半数有效置（ED50），用等效应图解法分析 A+D 的合并作用。**[结果]** 蒿甲醚 0.4 mg/(kg·d)×4 d 的 d4 减虫率与对照组相比差异无显著性；[A 0.4 mg/(kg·d)+D7.7 mg/(kg·d)]×4d 的抗疟效果提高,与对照组相比差异有显著性(P<0.05)。A+D 各组的 ED_{50} 均低于单用药组；不同配伍比例的 R 值皆大于 0.4，小于 2.7(0.4<R<2.7)。**[结论]** 蒿甲醚与瑞香素伍用治疗感染伯氏疟原虫小鼠能提高抗疟疗效，且两药合并呈相加

作用。

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恶性疟原虫现场样品 HRP-II 基因部分序列分析

汪俊云　洪远东　杨玥涛　包意芳

[目的] 分析和比较不同地理株恶性疟原虫现场样品及我国恶性疟原虫现场样品与实验室培养虫株在 HRP-II 基因上的多态性。**[方法]** 分别以在中国感染的恶性疟病人和在非洲感染的恶性疟病人全血为材料，PCR 扩增 HRP-II 基因片段，扩增的产物分别克隆于 pUCm-T 载体并进行测序，用 GENEDOC 软件比较分析核苷酸序列及其推导的氨基酸序列的同源性。**[结果]** 从中国海南省和云南省恶性疟病人血样中扩增出序列和长度完全相同的片段，大小为 447bp；从在非洲感染的恶性疟病人血样中扩增出 813bp 的片段；中国恶性疟原虫实验室培养株相应核苷酸序列长度为 870bp。从中国恶性疟病人血样扩增出的 HRP-II 基因片段序列于从非洲恶性疟病人血样扩增出的 HRP-II 基因片段序列及我国恶性疟原虫培养株相应的核苷酸序列相比，不但有多和长短不等序列的缺失和插入，还有多个碱基发生了突变；比较推导的氨基酸序列，除了有多和长短不等氨基酸的缺失和插入外，其他氨基酸残基没有发生改变。**[结论]** 恶性疟原虫 HRP-II 基因在不同地理株间存在差异，在同一地理株的实验室培养株与现场样品间也存在差异，这些差异主要表现为长度差异和少量碱基变异。

一种治疗抗药性恶性疟较理想的药物组合

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[目的] 探讨治疗抗药性恶性疟的有效方案。**[方法]** 双氢青蒿素、咯萘啶单用及伍用分别治疗恶性疟患者，在服药后 14d、21d 和 28d 和个随访 1 次。以退热时间、无性体原虫消失时间、复燃时间、复燃率、药后配子体出现率、药物副反应等为指标，以双氢青蒿素、咯萘啶标准疗法为对照，进行临床双盲试验，综合评估双氢青蒿素合并喀萘啶疗法。**[结果]** 双氢青蒿素、咯萘啶单用及伍用分别治疗 69、72 和 82 例恶性疟现症患者，伍用组退热时间（28.9±22.6）h，与喀萘啶单用组（34.3±15.3）h 相似（P>0.05），显著快于双氢青蒿素单用组的(42.0±31.7)h 0.02>P>0.01)。伍用组无性体原虫消失时间(30.9±11.7)h,与双氢青蒿素单用组 （26.8±6.9）h 相似(P>0.05),显著快于喀萘啶单用组(46.3±19.4)h (P<0.001)。伍用组治后配子体出现率、持续时间及密度分别为 11.1%、6.2d 和 4 个/uL 血，与双氢青蒿素单用组 10.3%、5.8d 和 3 个/uL 血相似（P>0.05），明显少于喀萘啶单用组 48.6%、14.4d 和 11 个/uL 血（P<0.01）。治后 28d 内伍用组与喀萘啶组单用组均无复燃，双氢青蒿素单用组恶性疟原虫复燃率为 2.9%，之后出现间日疟原虫者 10.1%。3 种治疗方案均无明显药物副反应。**[结论]** 双氢青蒿素与喀萘啶伍用能有效治疗抗药性恶性疟，既保持了两要的优

点，也克服了两药的不足，是目前治疗抗药性恶性疟较为理想的药物组合。

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利什曼病

中华白蛉防治对控制内脏利什曼病的追踪观察

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[目的] 观察灭蛉与家犬药浴措施后内脏利什曼病流行的影响。**[方法]** 在四川省南坪县野外洞穴用奋斗呐（50 mg/m^2）滞留喷洒灭蛉和药浴（2.5%溴氰菊酯可湿性粉剂 250mg/L）家犬防治中华白蛉措施后，逐年进行野外洞穴白蛉密度观察和当地内脏利什曼病的流行病学调查。**[结果]** 野外洞穴白蛉密度得到有效控制。家犬药浴和白蛉密度降低后，对控制内脏利什曼病起到一定作用。**[结论]** 在内脏利什曼病流行区，采取家犬药浴和野外洞穴药物滞留喷洒灭蛉措施，对预防和阻断内脏利什曼病传播具有重要作用。

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螺类

环境温度与钉螺耗氧量关系的研究**

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[目的] 探索环境温度与钉螺耗氧量关系及钉螺“冬眠”或“夏蜇”现象与耗氧量关系。**[方法]** 在实验室模拟自然环境，逐步改变温度，分别测定 0-40℃环境温度条件下钉螺耗氧量的值，判断环境温度与钉螺耗氧量的关系，同时观察钉螺“冬眠”和“夏蜇”情况，分析钉螺耗氧量与“冬眠”率和“夏蜇”率的相关关系。**[结果]** 环境温度在 1-36℃之间钉螺耗氧量温度随温度升高而增加，钉螺耗氧量随环境温度的变化趋势与曲线方程 $y=6.6X10^{-5}—3X10^{-6}+4.4X10^{-6}x^2—8X10^{-8}X^3$ 高度拟合（R^2=0.998, F=2 775, P<0.01）。环境温度降至 3℃以下，钉螺耗氧量趋向平稳。3-29℃之间每一温度梯度钉螺耗氧量平均增加 $1.184X10^{-4}$mg/snail.h (95%可行区间为 $8.65X10^{-5}$-$1.503X10^{-4}$mg/snail.h), 29-36℃平均增加 $2.92X10^{-5}$mg/snail.h (95%可行区间为 $1.71X10^{-5}$-$4.13X10^{-5}$mg/snail.h), 后者升幅显著地与前者。37℃开始出现钉螺死亡；“冬眠”率与耗氧量之间呈直线回归关系（R^2=0.928, F=102.28, P<0.01）；随着温度的升高，钉螺耗氧量升幅明显下降，但当温度升高至 35℃左右才开始出现“夏蜇”现象，至 40℃时仅有 27.28%钉螺表现出“夏蜇”状态。**[结论]** 钉螺耗氧量随温度的升高而增加，但过冷或过热均明显抑制钉螺的氧代谢。温度下降，钉螺“冬眠”率增加，耗氧量降低。高温使钉螺耗氧量明显受抑制，“夏蜇”率虽有提高，但并不明显。

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钉螺卵在恒温环境中发育零点和有效积温的研究**

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[目的] 研究钉螺卵在不同恒温环境中的发育零点和有效积温。**[方法]** 将钉螺卵置于不同的恒温环境中，观察其发育历期与积温，采用拟合模型方程法求出螺卵发育的零点温度；按有效积温法则 K=N(T-C)，计算螺卵发育的有效积温。**[结果]** 钉螺卵在 15-30℃环境中的平均发育历期为（26.29±17.29）d。螺卵的发育零点为 11.79℃；高温临界温度为 38.22℃；平均发育积温和有效积温分别为(557.76±198.95)日度和(236.02±68.02)日度。**[结论]** 螺卵的发育速率随环境温度的升高而加快，但温度过高对螺卵的发育有抑制作用，27℃左右为钉螺卵发育的最适温度；螺卵发育所需的有效积温随温度的升高而增加。研究结果可作为钉螺生物学的基础理论参数之一。

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子一代实验室钉螺细胞色素 *c* 氧化酶Ⅰ、细胞色素 *b* 基因序列分析**

张仪 Yamasaki Hiroshi* 刘和香 冯婷 冯正

[目的] 了解钉螺子一代（F1）实验室钉螺群（湖北钉螺湖北亚种）内的遗传变异。**[方法]** 实验室饲养的 F1 钉螺，单个抽提基因组 DNA，PCR 扩增细胞色素 c 氧化酶Ⅰ（COI）、细胞色素 b（Cytb）基因并测序，用 GENETYX-MACver.9 软件进行同源排序、DNA 和氨基酸序列分析，同时与 GenBank 相同基因序列比较。**[结果]** 实验室螺群内，COI 基因差异为 12.2%，94 个氨基酸发生变化。Cyt*b* 基因差异 6.4%，有 25 个氨基酸发生变化。湖北亚种与滇川亚种 COI 基因序列差异率为 13.5%。与 GenBank 中湖北钉螺滇川亚种 Cyt*b* 基因序列比较，差异为 13.6%，在 203 个氨基酸中 6 个氨基酸发生变化。**[结论]** F1 实验室钉螺群内核苷酸与氨基酸序列均发生变异。

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其它

PCR-RFLP 技术用于鉴别赫坎按蚊复合体近缘种按蚊的研究

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[目的] 区别赫坎按蚊种团内近缘种。**[方法]** 应用聚合酶链式反应连接的限制性片断长度多态性方法（PCR-RFLP）技术，对辽宁省现场捕获的按蚊用特异性 ITS_2 引物进行 PCR 扩增，限制型内切酶 Rsa I 和 Hind I 消化，琼脂糖凝胶电泳分析。**[结果]** 中华按蚊的 PCR 扩增产物能被限制性内切酶 Rsa I 酶切成 350bp 和 200bp 两条酶切 DNA 条带；嗜人按蚊核糖体 DNA（rDNA）的 PCR 扩增产物能被限制性内切酶 Hinf I 酶切成 410bp 的酶切 DNA

条带；雷氏按蚊的 ITS_2 基因 PCR 扩增产物能分别被限制性内切酶 Rsa I 和 Hinf I 酶切，分别显示 350bp 和 400bp 的酶切 DNA 条带；八代按蚊的 PCR 扩增产物没有显示明显的限制性内切酶 Rsa I 或 Hinf I 酶切条带。**[结论]** 依据 rDNAde ITS2 区段基因特征建立的 PCR-RFLP 技术可用于鉴别赫坎按蚊种团的中华按蚊、嗜人按蚊、雷氏按蚊和八代按蚊 4 个近缘种按蚊。

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我国七种白蛉咽甲的超微结构研究

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[目的] 研究不同地域的 7 种白蛉(白蛉属 5 种,司蛉属 2 种)咽甲内侧壁的超微结构。**[方法]**采用扫描电子显微镜进行咽甲超微结构的分析。**[结果]** 白蛉咽甲的内侧壁由一些齿形结构和横嵴组成，齿形结构和横嵴的形状、数目以及排列方式在各蛉种间表现不同。**[结论]** 不同种属的白蛉咽甲在超微结构上有明显的差异,可为蛉种鉴定提供形态学依据.

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全国囊虫病、包虫病血清流行病学调查质量评价

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[目的] 对全国囊虫病、包虫病血清流行病学调查质量进行评价。**[方法]** 用相同试剂盒，按统一的操作规范，对各地检测出全部阳性血清和随机抽取的部分阴性血清进行复测，并采用符合率和 Kappa 统计量评价两次检测结果的一致性。**[结果]** 囊虫病、包虫病两次检测结果阳性率分别为 58.54%和 91.12%，阴性符合率分别为 98.33%和 96.58%，总符合率分别为 98.85%和 97.74%。Kappa 值分别为 0.7139 和 0.9362。囊虫病二次检测重现性好，包虫病二次检测重现性极好。Kappa 统计量分析回代结果一致性都具有极显著性意义〈P<0.01〉。**[结论]** 本次囊虫病和包虫病血清流行病学调查质量控制较为理想。

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胎膜早破 155 例临床分析

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[目的] 探讨胎膜早破对妊娠结局的影响。**[方法]** 对 156 例胎膜早破住院分娩孕妇和 564 例无妊娠合并症及并发症正常分娩孕妇作回顾性分析。**[结果]** 胎膜早破组的剖宫产率、

早产率、新生儿窒息率及肺炎发病率均比对照组显著升高。**[结论]** 胎膜早破是难产的常见并发症之一，对母婴造成不良影响。

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卵巢子宫内膜异位囊肿的 CT 表现

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[目的] 评价 CT 在卵巢子宫内膜异位囊肿诊断中的价值。**[方法]** 回顾性分析 20 例经手术病理证实的卵巢子宫内膜异位囊肿的 CT 表现。**[结果]** 20 例中共发现 25 个子宫内膜异位囊肿。主要表现为①异位囊肿外缘不规则，内膜较光整，一般无壁结节。②囊内可见分隔，CT 增强扫描囊壁均匀中等度强化。③囊液 CT 值由水样到新鲜血样不等。④主囊外小子囊为较特征性表现。**[结论]** CT 对卵巢子宫内膜异位囊肿的诊断有重要作用。

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多房棘球蚴病特异性诊断抗原 Em18 的基因克隆、表达和血清学评价

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[目的] 克隆从我国四川省分离的多房棘球绦虫 Em18 抗原基因片段，表达重组抗原，用于多房棘球蚴病(AE)的诊断，并用患者血清对其诊断价值进行评价。**[方法]** PCR 扩增目的基因片段与质粒载体 pET28a(+)连接构建表达质粒，转化大肠埃希菌 BL21(DE3)菌株表达重组蛋白，用镍-次氮基三乙酸琼脂糖树脂(NI-NTAagarose)亲和层析纯化重组抗原，酶联免疫吸附测定(ELISA)评价重组抗原的血清学诊断效果。**[结果]** 获得两个高效表达克隆 ReEm18-1 和 ReEm18-2。其中 ReEm18-1 与预期序列一致，ReEm18-2 为同一序列，但有 27 bp 的核苷酸缺失。两个克隆表达的融合蛋白相对分子质量(Mr)分别为 28 000 和 26 000。对 101 例 AE、47 例细粒棘球蚴病、30 例囊尾蚴病、10 例肝癌、9 例血吸虫病和 40 名健康人共 237 份血清进行 ELISA 检测,结果显示,ReEm18-1 和 ReEm18-2 重组抗原对 AE 血清诊断的敏感性为 86.1%和 90.1%、特异性为 93.4%和 94.1%、阳性预期值为 90.6%和 91.9%、阴性预期值为 90.1%和 92.8%、诊断效率分别为 90.3%和 92.4%；对 58 例 AE 患者肝脏病灶大小与重组抗原检测血清平均吸光度(A)的相关性比较分析结果表明，抗体反应水平在病程早期有较好的相关性。**[结论]** Em18 重组抗原对 AE 具有特异性诊断价值，检测的抗体水平在早期与病程有较好的相关性，对筛查早期患者有一定应用价值。ReEm18-2 与 ReEm18-1 两者的效果相似。

棘球蚴特异性抗原的蛋白质印迹分析

江莉　薛海筹　裘丽姝　冯正

[目的] 寻找细粒棘球蚴(Eg)和多房棘球蚴(Em)特异性抗原组分用于免疫诊断。**[方法]** 对 Eg、Em 的囊液、原头节、囊壁角质层、囊壁生发层及犬泡状带绦虫、犬豆状带绦虫、羊细颈囊尾蚴、猪囊尾蚴等 4 种异源性绦虫，共 14 种粗抗原进行免疫学分析。采用蛋白质印迹试验(Western blotting)、Genesnap 和 Genetoo1 分析软件比较分析不同抗原蛋白条带分别与囊型棘球蚴病(CE)及泡型棘球蚴病(AE)患者血清反应的差异。**[结果]** 14 种粗抗原中与 CE、AE 患者血清发生交叉反应的 11 条蛋白条带相对分子质量(Mr)为 130 000、100 000、94 000、80 000、75 000、66 000、62 000、52 000、38 000、32 000 及 24 000；与 CE 患者血清有特异性反应的 5 条蛋白条带 Mr 为 41 000、40 000、22 000、16 000 和 12 000；与 AE 患者血清具有特异性反应的 8 条蛋白条带 Mr 为 120 000、109 000、86 000、59 000、43 000、28 000、20 000 及 18 000。**[结论]** 确定了 Eg 和 Em 共有的交叉反应性抗原和具有进一步研究价值的特异性抗原组分，为进一步分离和鉴定具有诊断价值的特异性抗原提供了基础资料。

§ 4. ABSTRACTS OF RESEARCH ARTICLES

SCHISTOSOMIASIS

THE CURRENT STATUS OF SCHISTOSOMIASIS EPIDEMICS IN CHINA

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[Objective] To analyze the change of tendency on schistosomasis epidemics in China in the last 5 years. **[Methods]** Data on schistosomiasis epidemics in the history and particularly in the last 5 years were collected. Tendency and the re-emerging status after 1998 were analyzed. **[Results]** Data in 2003 showed that in 42%, 40% and 53% of the province, counties and townships with epidemics, the transmission of the disease with snails were also reduced by 92.74% and 73.56%, in 2003. The annual estimated number of chronic cases was around 800 000 and 31 321.5 hectare of snail infested areas were newly identified in recent 5 years. Among 20 national villages under longitudinal surveillance, 30%, 70% and 35% of the villages were presented a tendency of increase in the rates of human infection, bovine infection and *Oncomelania* snails infection, respectively. A total of 38 counties from 7 provinces have reemerged in schistosomiasis transmission after those counties having reached criteria of transmission under control or interrupted. In 6 non-endemic counties, snails were presented, and 16 marshlands in Xan river were found with appearance of acute cases of schistosomaisis. More snail infested areas were found in Xan river Shanghai, Zhejiang, and Fujian. Both snail infested areas and newly infected cases were occurred in urban areas along the Yangtze River. **[Conclusion]** The tendency of increase was presented in focal areas along the Yangtze River, due to changes of environmental, ecological, societal and economic status, as well as on the forces of control.

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STUDY ON THE RE-EMERGING SITUATION OF SCHISTOSOMIASIS EPIDEMICS IN AREAS ALREADY UNDER CONTROL AND INTERRUPTION

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[Objective] To study the current situation and the cause of schistosomiasis resurgence in

order to provide reference for formulation of control strategy. **[Methods]** Data in 1999-2003 and baseline data in some areas were collected and analyzed retrospectively. **[Results]** Resurgence was seen in 6.15% (16/260) of the areas and one farm where transmission of schistosomiasis and been interrupted and 33.33% (21/64) of the areas already under control. Snails appeared to have been rebounded only in six counties (farm) while in thirty two counties that rebound was seen in both snails and disease prevalence. Tendency of increase in the total numbers of patients, acute patients and cattle with schistosomiasis, areas with snails were seen from 1999 to 2003. **[Conclusions]** Environmental, ecological, societal factors such as flood, acequia, lack of expenditure and lack of incentives at work etc. contributed to the resurgence of epidemics in those areas that criteria had been reached. Surveillance and supervision on the sources of infection and snail diffusion, especially in the areas where the transmission of schistosomiasis and already been under control.

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SCREENING OF CDNA LIBRARY OF *SCHISTOSOMA JAPONICUM* WITH SERA FROM RABBITS VACCINATED WITH ULTRAVIOLET-ATTENUATED SCHISTOSOMULA*

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CAO Jian-ping CHEN Jia-xu

[Objective] To search new potential schistosomiasis vaccine by screening cNDA library with sera of rabbits vaccinated with attenuated larvae. **[Methods]** *Schistosoma japonicum* (Sj) adult worm cDNA library was screened with sera of rabbits vaccinated with ultraviolet-attenuated schitosomula and by sera of infected rabbits, and the inserts of positive clones were amplified and sequenced. **[Results]** Six kinds of Sj genes were obtained after three rounds of screening. Among the genes were glyceralde-hyde 3-phosphate dehydrogenase (GAPDH), serine protease inhibitors (serpin), mitochondrion coding region, part of myosin heavy chain gene and two new genes, respectively. **[Conclusion]** Screening cDNA library with sera of animals vaccinated with attenuated larvae us an effective way to search new vaccine candidates for schistosomiasis.

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EFFECT OF ARTEMETHER ON *SCHISTOSOMA MANSONI*: DOSE-EFFICACY RELATIONSHIP, AND CHANGES IN WORM MORPHOLOGY AND HISTOPATHOLOGY

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Marcel Tanner[*] Jurg Utzinger[*]

[Objective] To investigate the effects of artemether on *Schistosoma mansoni* harboured in mice, with particular consideration on single dose-efficacy relationship, hepatic shift and artemether-induced alterations in worm morphology and histopathology. **[Methods]** Groups of mice, infected with 21 d old *S. mansoni*, were treated with artemether at single oral doses of 12.5 mg/kg to 600 mg/kg. Worm burden reduction was assessed 28 d post-treatment. The hepatic shift was investigated in mice infected with 46 d old *S. mansoni* and treated with artemether at a single oral dose of 400 mg/kg within a period of 14 d post-treatment. Morphological and histopathological observations were made in adult worms in mice, subject to single oral dose of artemether at 400 mg/kg. **[Results]** The minimum effective dose of oral artemether against juvenile worms in mice was 200 mg/kg, resulting in a worm burden reduction of 81%. The hepatic shift commenced 8 h post-treatment, and all worms shifted to the liver 3 -7 d post-treatment. Fourteen days post-treatment, 31% of the worms returned to the mesenteric veins. Treatment with artemether resulted in decreased worm body size, expansion of the pharynx and dilation of the gut with marked reduction in pigment. Focal tegumental damage was observed among female worms with adherence of host leukocytes and degeneration of ovary and vitelline glands, as well as atrophy of testis in male worms. Artemether-damaged worms were surrounded and infiltrated by eosinophils. **[Conclusion]** The minimum effective dosage of artemether against 21 d old *S. mansoni* in mice is 200 mg/kg. Artemether also exhibits effect against adult schistosomes, including shrinkage and degeneration, and can lead to worm death. The predominant inflammatory cell surrounded and infiltrated into the artemether-damaged worm is eosinophil.

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PREDICTION OF THE IMPACT OF CLIMATE WARMING ON TRANSMISSION OF SCHISTOSOMIASIS IN CHINA[**]

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[Objective] To predict the intensity and scale of impact on transmission of schistosomiasis japonica in China caused by the climate warming. **[Methods]** By using climate data from 193 weather stations in China from 1951 to 2000, the GIS database was created to analyze the

tendency of average daily temperature. By using data the results from the effective accumulated temperature models on *Oncomelania* snails and *Schistosoma japonicum*, the climate-transmission model for schistosomiasis was established at country level, by which the spatio-temporal analysis was performed to create the distribution maps of Oncomelania snails and *Schistosoma japonicum*, respectively, by means of GIS approaches based on the ratio of effective accumulated temperature to the snail or the parasite development temperature (ET/SDT) in all 193 stations. The potential distribution maps with the dispersal risk areas of *schistosomiasis japonica* in 2030 and 2050 were created based on forecast data that the average temperature of the country will increase by 1.7℃ in 2030 and by 2.2℃ in 2050. **[Results]** The GIS database of climate-schistosomiasis of the country was established. It was found that the average temperature in the last 5 decades inclined, especially after 1990 it increased significantly with its increasing regression formula T=0.0198X-28.476. The climate-transmission model for schistosomiasis was established, and it was found that the geographical distribution of *Schistosoma japonicum* was much larger than that of Oncomelania snails based on the ration of ET/SDT. The prediction maps for distribution of schistosomiasis in 2030 and 2050 were created, respectively, which showed that the sensitive areas were extended with the time, the risk of expansion northward for schistosomiasis will be increasing due to directly the climate warming. **[Conclusion]** It is predicted that a northward expansion of transmission area of schistosomiasis may occur due to the climate warming, the expanded potential area for schistosomiasis transmission will be important for future surveillance.

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CONSTRUCTION OF T VECTOR AND RAPID CLONG OF PCR PRODUCTS OF GENE ENCODING *SCHISTOSOMA JAPONICUM* ACTIN*

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[Objective] To construct pGEM5Zf-T vector and directly clone the polymerase chain reaction products of translate region for *Schistosoma japonicum* actin into the T vector. **[Methods]** The complete gene encoding *S.japonicum* actin was amplified by RT-PCR. The pGEM5Zf-T vector was prepared by cutting pGEM5Zf(+) vector with EcoR V and adding a 3' terminal thymidine to both ends by incubating with Taq polymerase in PCR buffer containing 2 mmol/L dTTP for a h at70℃. The RT-PCR product was cloned into T vector and sequenced. **[Results]** Direct cloning of the PCR products was achieved and identified by agarose gel electrophoresis, digestion with endonu-cleases, PCR and sequencing. The efficiency of AT cloning was much higher than that of blunt-end ligation. The RT-PCR product, cloned into the T vector, was sequenced and shown to be 92.5% identical at the nuclei acid level and 99.7% identical in deduced amino acid sequence to that of *S.mansoni* actin. **[Conclusion]** The T vector

is a convenient system for cloning of PCR products of the gene encoding *S.japonicum* actin, and the AT cloning is rapid and effective. The recombinant plamids prepared by the AT cloning could be sequenced directly due to binding site of pUC/M13 sequencing primer within it. The gene encoding actin of *S.japonicum* is high homologous with that of *S.mansoni*.

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SCHISTOSOME TRANSCRIPTOMES: NEW INSIGHTS INTO THE PARASITE AND SCHISTOSOMIASIS

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Schistosomiasis is one of the most serious parasitic diseases. More than 250 million people are infected with schistosomes in the tropics or subtropics. The parasitic flukes have some unique biological features: dioecism, complex life cycles, mechanisms to avoid host immune responses, and an apparent relinance on host endocrine and immune signals to complete their development, maturation and egg production. Recently, a large dataset of expressed sequence tags (ESTs) were generated from *Schistosoma japonicum* and *Schistosoma mansoni*, from which numerous novel genes were indentified. The transcriptome analyses provide the basis for a comprehensive understanding of the molecular mechanisms involved in schistosome nutrition and metabolism, host-dependent development and maturation, immune evasion and invertebrate evolution. In addition, new potential vaccine candidates and drug targets have been predicted.

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PREDICTION OF SCHISTOSOMIASIS USING GEOGRAPHIC INFORMATION SYSTEM IN JIANGSU, ANHUI AND JIANGXI PROVINCES

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YANG Guo-jing[4] *ZHANG Shi-qing*[1] *WANG Qi-zhi*[1]

[Objective] Using climate parameters to build up a model for prediction of the endemic situation of schistosomiasis in the lower reach of the Yangtze River, China. **[Methods]** The base geographic information system was set up on schistosomiasis. The FAO-CLIM database form municipal climate stations in Jiangsu, Anhui and Jiangxi provinces were collected. Malone's formula was employed to calculate the index of schistosomiasis transmission of study sites. The map calculation of schistosomiasis transmission in transmission seasons was combined in terms

of the index of schistosomiasis transmission. It was composed of different colors to show the intensity of transmission in different space and time. Meanwhile the map calculation for four seasons was made and combined with the data derived form AVHRR satellite images. The spatial and GIS layer analysis between the index of season transmission and NDVI were preformed with the software of ArcView 3.2a and ERDAS. Whether the study sites were endemic or not were surveyed. Rank correlation analysis was employed to test coefficient of correlation between the predicted results and real endemic situation. **[Results]** There was close correlation between the index of schistosomiasis transmission and real endemic intensity in the study sites. **[Conclusion]** GIS and remote sensing technique can predict the endemic regions and transmission intensity of schistosomiasis.

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STUDY ON THE RISK FACTORS OF SCHISTOSOMIASIS TRANSMISSION AND CONTROL STRATEGY IN THE THREE GORGES RESERVOIR AREAS

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ZHENG Jiang *WANG Ru-bo* *ZHOU Xiao-nong* *LIU Geng-yun*[**]
WANG Kai-yu[**] *SUN Bing*[**]

[Objective] To understand the risk factors of schistosmiasis transmission in the Three Gorges Reservoir Area (TGRA) and to provide evidence for the development of control strategy. **[Methods]** Approaches including epidemiology, immunology and field survey were applied to investigate the potential risk factors with would involve the importation of infectious resources live mobile and migrant population, and livestock in the reservoir area. Meanwhile, observation on survival and reproductive status of snail under simulation habitats was also carried out, using ecological methods on snails. Strategy in preventing the spread of snail as infectious resources was also provided. **[Results]** 175 mobile people from schistosomiasis endemic area of were tested and one person showed immunology tests positive rate of 0.57%. Through the two-year period under observation, data showed that the snails with ribbon/smooth shells could survive and reproduce under habitats of simulation. **[Conclusions]** Once the infectious resource of schistosomiasis was introduced into the TGRA, the area became a new schistosomiasis epidemic area in TGRA which called for countermeasures to be taken.

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EFFECT OF *SCHISTOSOMIASIS JAPONICUM* INFECTION ON ONCOMELANIA HUPENSIS**

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*WU Feng** *YANG Kun**

[Objective] To understand the effect of *Schistosoma japonicum* infection on *Oncomelania hupensis*. **[Methods]** Uninfected *Oncomelania* snails were collected from the marshland of the Yangtze River in Anhui Province and exposed to and infected with miracidia of *S.japonicum* in the laboratory. After the exposure, those snails and unexposed snails as the control were raised in the natural environment of the same field and all the snails were observed and recorded every 10 days. The survival rate and death rate were calculated, and expected survival time was also calculated with the animal life table method. **[Results]** The peak of death of the infected snails was between 60 and 70days after the exposure, and the expected survival time was 63.46 days and the longest survival time was 135 days. The peak of death of the unexposed snails was between 80 and 90 days, and the expected survival time was 83.54 days and the longest survival time was 155 days. The expected survival time of the infected snails was 24.04% shorter compared with that of the uninfected. **[Conclusion]** The death rate of snails infected with *S.japonicum* increases and the survival time decreases in the natural environment.

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MALARIA

THE APPLICATION OF REMOTE SENSING DATA IN EPIDEMIC SITUATION ANALYSIS OF MALARIA AND ENCEPHALITIS B

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[Objective] To explore the epidemic regularity of malaria and encephalitis B by using the data of remote sensing (Rs) in flood area. **[Methods]** The demarcation standards in counties with flood disaster were formed depending on the descriptive analysis results of remote sensing data and combined with that of field survey. Three indicators were used to analyze the epidemic situation of malaria and encephalitis B in Jiangxi Province during a heavy flooding in 1998: the increasing percentage of incidence in 1998 comparing with the median of past five years (1993-1997), the increasing percentage of incidence in 1998 comparing with that of 1997, the increasing percentage of incidence in 1999 comparing with that of 1998. **[Results]** The demarcation standards of flooding counties were defined as follows: by Rs, a county with a flood area of over 100 thousand mu was classified into group one, a county with a flood area under 100 thousand mu was classified into group two, a county with reported flood but not identified

by RS was classified into group three, the other counties in the province were classified into group four. The malaria incidence in the province in 1998 was at an average historical level. Compared with 1997, malaria incidence in each group increased in 1998 by 111.61% in group one, 97.50% in group two, 43.63% in group three. So there is an evident correlation between the flood area by Rs and the increasing of malaria incidence (Rs=0.893, $P<0.05$). Malaria incidence in 1999 in non-flood area increased by 83.39% in comparison with that of 1998. The encephalitis B incidence increased by 252.03% in 1998 in group four compared with that of 1997; while the incidence increased in all the four groups in 1999 than that of in 1998. **[Conclusion]** The remote sensing data on flood can help gully analyze the epidemic situation of malaria and encephalitis B.

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ADDITIVE THERAPEUTIC EFFECT OF A COMBINATION OF ARTEMETHER AND DAPHNETIN AGAINST *PLASMODIUM BERGHEI* IN MICE*

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[Objective] To investigate the therapeutic effect of a combination of artemether and daphnetin against *Plasmodium berghei* ANKA strain in mice. **[Methods]** Groups of *P.berghei* infected mice were treated with various oral doses of artemether and daphetin according to "4-day suppress assay". Thin blood smears were made on the fifth day after inoculation of parasites and the parasitemia reduction rate was calculated. The ED50 values obtained were plotted on isoblograms. A combined action of artemether and daphnetin was aeesessed. **[Results]** Artemether 0.4mg/(kg • d) ×4d exhibited no detectable antimalarial effect, while artemether 0.4mg/(kg • d) ×4d combined with daphnetin 7.7 mg/kg • d×4d showed potent antiparasile efficacy. The ED_{50} s of artemether in combination with daphnetin were lower than that of single artemether or daphnetin. The R-values were higher than 0.4, but lower than 2.7. **[Conclusion]** The combination of artemether with daphnetin showed an additive antiparasile effect.

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SELECTION AND REVERSAL OF *PLASMODIUM BERGHEI* RESISTANCE IN THE MOUSE MODEL FOLLOWING REPEATED HIGH DOSE OF ARTEMETHER

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Artemether, a derivative of artemisinin, is effectively used for the treatment of malaria without any clinically relevant resistance to date. Artemether has also been developed as an antischistosomal agent, exhibiting highest activity against immature parasites. Here, we employ a rodent model and investigate whether the proposed artemether treatment schedule to prevent schistosome-attributable morbidity might select for *Plasmodium berghei* resistance. Mice infected with an ANKA strain of *P.berghei* were treated with artemether at either 47mg/kg or 300 mg/kg. Once every 7-10 days, parasitized erythrocytes were passed to the next group of mice, receiving the same doses of artemether, for 50 passages. Resistance development was slow but increased considerably over the final ten passages. At the higher dose of artemether, the indices of resistance were 4.8 and 8.8 after 40 and 50 passages, respectively. Importantly, resistance was unstable, since sensitivity reverted to near-nomal after five passages without drug pressure. A moderate index of *P.berghei* resistance and no apparent reversibility was found in comparative experiments employing pyronaridine. In conclusion, the pace of resistance development in *P. berghei* to repeated high doses of artementher is slow and reversible.

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COMPARATIVE STUDY ON SCHIZONTOCIDAL ACTIVITY OF RECRYSTALLIZED OR CRUDE DAPHNETIN AGAINST MALARIA PARASITES*

WANG Qin-Mei NI Yi-Chang GUO Jian WU Jia-tong QIAN Ying-jun

[Objective] To compare the schizontocidal activity of recrystallized or crude daphnetin against malaria parasites in vivo. **[Methods]** Schizontocidal activity of recrystallized or crude daphnetin at various dosages was assessed in mice infected with *Plasmodium berghei* ANKA using 1 “4-day suppress assay”. **[Results]** The comparison of the reduction rate of parasitemia caused by either recrystallized or crude dephnetin showed that ED50 of crude daphnetin was 18.36mg/kg, with 95% confidence limit of 5.96-56.54mg/kg while ED50 of recrystallized daphnetin was 11.46mg/kg, with 95% confidence limit of 8.63-15.22 mg/kg. **[Conclution]** The results indicate that the efficacy of recrystallized daphnetin is 37.6% higher that of crude daphnetin.

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ANALYSIS ON THE POLYMORPHISM OF *PLASMODIUM FALCIPARUM* HRP-II GENE

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[Objective] To analyze the polymorphism of *Plasmodium falciaprum* HRP-II gene in field samples with different geographic origin or between field strains and cultured isolate. **[Method]** HRP-II gene fragments of *P.falciparum* were amplified by PCR from blood samples of patients infected with *P.falciparum* in China and in Africa, respectively, then the amplified fragments were cloned into vector pUCm-T and their nucleotide sequences were determined. The sequences were compared and analyzed using GENEDOC software. **[Results]** A fragment of 447bp was amplified from all blood samples from patients infected with *P.falciparum* in China and their sequences were also identical. However, a 813bp fragment was amplified from blood samples of patients infected with *P.falciparum* in Africa. Alignment of their sequences revealed that not only different length of sequences were deleted and a eighteen-oligonucleotide was inserted in the HRP-II gene fragment amplified from blood of patients infected in China, but also ten nucleotides were different between two amplified nucleotide sequences. There was no difference in the two deduced amino acid sequences except a few deletions and / or insertions of different length. Alignment of sequence from Chinese *falciparum* malaria patients with published sequence from cultured Chinese trains of *P.falciparum* also revealed deletion/insertion of several different length of sequences and several nucleotide mutation. **[Conclusion]** There was considerable difference in the HRP-II gene, mainly in length of sequence, not only in field strains with different geographic origin but also between samples and cultured strains of *P. falciparum*.

AN IDEAL COMBINED MEDICATION SCHEME FOR THE TREATMENT OF DRUG-RESISTANT FALCIPARUM MALARIA

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[Objective] To development a more effective regimen with drug-combination for the treatment of drug-resistant falciparum malaria. **[Method]** To treat drug-resistant falciparum malaria cases by single dihydroartmisinin, single pyronaridine and a combination of dihydroartemisinin/pyronaridine, then follow up on day 14, 21 and 28 after drug administration. Fever subsidence time, parasite clearance time, recrudescence time, gametocyte carrier rate, and the development of side effects were used as the indices for evaluation. Standard regimens of single dihydroartemisinin and single pyronaridine were used as control groups, double blind clinical trials were performed for comprehensive evaluation of the regimen of dihydroartemisinin/pyronaridine combnination. **[Results]** 69,72,82 falciparum malaria cases

were treated respectively with single dihydroartemisinin, single pyronaridine and the two-drug combination, the fever subsidence time of drug combination group was (28.9±22. 6)h, showing no significant difference to that of single pyronaridine group （34.3±15.3）h (P>0.05), significantly quicker than (42.0±31.7)h 0.02>P>0.01) of single dihydroartemisinin. The parasite clearance time of drug combination group was (30.9±11.7)h, showing no significant difference to that of the dihydroartemisinin group （26.8±6.9）h (P>0.05), significantly quicker than of single pyronaridine group (46.3±19.4)h (P<0.001). After treatment, the emerging rate, duration and density of gametocytes were respectively 11.1%, 6.2d and 4 gametocytes/uL blood, which were similar to the 10.3%, 5.8d and 3 gametocytes/uL blood (P>0.05) in the dihydroartemisinin group, but significantly better than 48.6%, 14.4d and 11 gamrtocytes/uL blood (P<0.01) of the pyronaridine group and pyronaridine group, but 2.9% recrudescence rate and 10.1% case with *Plasmodium vivax* were found in dihydroartemisinin group. No evident side effect was found in all the three regimens. **[Conclusions]** The dihydroartemisinin and pyronaridine combination is an ideal drug combination against drug-resistant falciparum malaria, which not only keeps the advantages of both drugs, but also overcomes their shortcomings.

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LEISHMANIASIS

THE EFFECT OF SANDFLY CONTROL ON THE TRANSMISSION OF VISCERAL LEISHMANIASIS

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[Objective] To observe the effect of Phlebotomus chinensis control including insecticide residual spraying in the habitats and bathing for dogs on the transmission of visceral leishmaniasis in Nanping of Sichuan Province. **[Methods]** Alphamethrin with a dosage of 50 mg/m^2 was sprayed in the wild caves and 2.5% deltamethrin wettable power at a concentration of 250 mg/L was applied for dog bathing in the villages. The density of sandflies in the natural caves was examined and data on the incidence of visceral leishmaniasis were collected from epidemiological survey following the sandfly control measures. **[Results]** The density of sandflies has been considerably reduced after the chemical spraying in caves, the important habitats of the sandlies. By both the cave spraying and bathing for dogs since 1993, the reported human cases of leishmaniasis also decreased. **[Conclusion]** Measures for sandfly control including insecticide spraying in the habitats and bathing for dogs with insecticide solution can significantly reduce the sandfly density, and can contain the transmission of visceral leishmaniasis in the endemic area.

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ANCYLOSTOMIASIS

COMPARISON OF MITOCHONDRIAL CYTOCHROME OXIDASE 1 DNA SEQUENCES FROM *NECATOR AMERICANUS* HOOKWORMS MAINTAINED FOR 100 GENERATIONS IN GOLDEN HAMSTERS *(MESOCRICETUS AURATUS)* AND HOOKWORMS FORM NATURAL HUMAN INFECTIONS

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The human hookworm *Necato americanus* was maintained through one hundred generations in the golden hamsters. The strain is now routinely maintained in laboratory hamsters through serial passage, and is the laboratory strain of choice for vaccine studies. Comparison of the mitochondrial cytochrome oxidase 1 (*cox-1*) sequences was shown previously to be useful for comparing the genetic structure of populations of *N.americanus* in China. Cytochrome oxidase 1 genes were amplified by the polymerase chain reaction, and the sequences compared to those of *N.americanus* recovered from infected humans from several regions in China. Sequence comparison revealed little difference between the laboratory strain and the field isolates at the *cox-1* locus, bus also indicated that the laboratory strain is represented by a single *cox-1* haplotype. These results suggest that the laboratory strain of *N.americaus* has undergone a severe genetic bottleneck, and that the genetic diversity in other genes, including potential vaccine antigens, could be similarly limited.

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NECATOR AMERICANUS: MANINTENANCE THROUGH ONE HUNDRED GENERATIONS IN GOLDEN HAMSTERS *(MESOCRICETUS AURATUS*). II. MORPHOLOGICAL DEVELOPMENT OF THE ADULT AND ITS COMPARISON WITH HUMANS

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SHEN Bing-gui XUE Hai-chou LI Tie-hua ZHAN Bin

Through 100 passages, the human hookworm *Necator americanus* was adapted to the golden hamster, *Mesocricetus auratus*, without either the requirement for exogenous steroids or other immunosuppressive agents, nor the requirement to infect hamsters as pups. Adult *N.americanus* recovered from infected hamsters were morphologically similar to those from infected humans in Sichuan Province, China, although they were smaller and the females produced fewer eggs. The natural history and kinetics of *N. americanus* infection was different in female and male hamsters. Female hamsters supported low intensity infections that lasted for

approximately two months. In contrast, the peak intensity of infection in male hamsters was high, but this situation lasted less than for 4 weeks at which time many of the hookworms were expelled. However, even after the major parasite expulsion, the total number of hookworm of consistently remained higher in chronically infected male hamsters compared with female hamsters. The hamster model of *N.americanus* is potentially useful for studying the development of new anthelminthic drugs and vaccines.

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SNAILS

STUDY ON RELATIONSHIP BETWEEN ENVIRONMENTAL TEMPERATURE AND OXYGEN DEMAND OF ONCOMELANIA SNAILS**

*HANG De-rong** *ZHOU Xiao-nong* *HONG Qing-biao** *YAN Wei-an**
*WU He-zhen** *YANG Kun**

[Objective] To explore the relationship between the environmental temperature and the oxygen demand of *Oncomelania* snails, and the relationship between the hibernation or aestivation and the oxygen demand of snails. **[Methods]** The oxygen demand of *Oncomelania* snails between 0℃ and 40℃ was determined by increasing the temperature gradually in lab, the relationship between the environmental temperature and the oxygen demand, and the correlative relationship between the oxygen demand and the percentage of snails in hibernation or aestivation were analysed. **[Results]** The oxygen demand increased as the temperature rose between 1℃ and 36℃, and the regression equation between the oxygen demand and the variation of environmental temperature was $y=6.6X10^{-5}-3X10^{-6}+4.4X10^{-6}x^2-8X10^{-8}X^3$ （R^2=0.998, F=2 775, P<0.01）. When the environmental temperature decreased under 3℃, the oxygen demand trended low and stable, and the average oxygen demand of increased one degree centigrade was $1.184X10^{-4}$mg/snail.h between 3℃ and 29℃(95% of confidence interval: $8.65X10^{-5}$-$1.503X10^{-4}$mg/snail.h) and $2.92X10^{-5}$mg/snail.h between 29℃ and 36℃(95% of confidence interval: $1.71X10^{-5}$-$4.13X10^{-5}$mg/snail.h). Some of the snails died at 37℃. There was a linear regression relationship between the oxygen demand and the percentage of snails in hibernation (R^2=0.928, F=102.28, P<0.01）. As the temperature rose, the amplitude of the oxygen demand declined obviously, and the snails had the aestivation phenomenon when the temperature was over 35℃ and 27.78% snails in aestivation state at 40℃. **[Conclusion]** The oxygen demand increases as the temperature rises. However, either excessive coldness or excessive hotness significantly inhibits the oxygen metabolism. As the temperature decreases, the percentage of snails in hibernation increases and the oxygen demand decreases. When the temperature is high, the oxygen demand is inhibited significantly, and the percentage of snails in

aestivation increases but is not statistically significant.

* Jiangsu Institute of Parasitic Diseases
** This investigation received financial support form Chinese National Science Foundation (No.300070864)

DEVELOPMENTAL ZERO AND EFFECTIVE ACCUMULATED TEMPERATURE OF ONCOMELANIA EGGS UNDER CONSTANT TEMPERATURE**

*HONG Qing-biao** *JIANG Yu-ji** *YANG Kun** *XI Wei-ping** *SUN Le-ping**
*HUANG Yi-xin** *ZHOU Xiao-nong*

[Objective] To determine the developmental zero and effective accumulated temperature of Oncomelania eggs under constant temperature. **[Methods]** The eggs were cultured under different constant temperature, and their development duration and effective accumulated temperature were studied. The zero accumulated temperature (℃) was obtained by using an estimation mode, and the effective accumulated temperature was obtained by effective accumulated mode of K=N(T-C). **[Result]** The average development duration was (27.29±17.29) d under 15-30℃, the development zero temperature was 11.79℃ and 38.22℃ under low and high temperature respectively, and the average development temperature and effective accumulated temperature were (557.76±198.95) DD and (236.02±68.20) DD. **[Conclusion]** The suitable development temperature of eggs is 27℃, the development speed and effective accumulated temperature of eggs increases with the temperature under given condition, but too high temperature may have negative impact on the development of eggs. The result can be considered as the basic biological parameter of the snail.

* Jiangsu Institute of Parasitic Diseases
** The investigation received financial support from Chinese National Science Foundation(No.300070684)

ANALYSIS OF CYTOCHROME C OXIDASE I AND CYTOCHROME B GENES OF F1 IN LABORATORY LINE *ONCOMELANIA HUPENSIS HUPENSIS***

*ZHANG Yi Yamasaki Hiroshi** *LIU-He-xiang FENG Ting FENG Zheng*

[Objective] To analyze the diversity of F1 in laboratory line *Oncomelania hupensis hupensis*. **[Methods]** Genomic DNA was isolated, and cytochrome c oxidase I (COI) and cytochrome b (Cyt*b*) genes were amplified by polymerase chain reaction (PCR). The nucleotide sequences of the PCR products were analyzed by GENETYX-MAC software, package (ver.9). **[Results]** Pairwise divergences among six F1 individuals were found in 12.2% mucleotides in COI gene fragments. 13.5% of genetic divergences between *O.h.hupensis* and *O.h. robertsoni*

were identified. 94 amino acids were observed in difference. In Cyt*b* gene Cyt*b* genes from *O.h.robertsoni* and *O.h. hupenesis* were 13.6%, included 6 amino acids. **[Conclusion]** Diversities were found in both COI and Cyt*b* gene sequences of F1 in laboratory line *O.h. hupensis*.

** Supported by Sasakawa Memorial Health Foundation Japan

THE OTHERS

IDENTIFICATION OF DIFFERENT ANOPHELINE MOSQUITOES WITHIN ANOPHELES HYRCANUS COMPLEX BY PCR-RFLP

ZHOU Hua-yun[*] *GAO Qi*[*] *GU Zheng-cheng* *ZHU Guo-ding*[*]
LI Ju-Lin[*] *CAO Jun*[*]

[Objective] To identify the different anopheline mosquitoes within *Anopheles hyrcanus* complex. **[Methods]** Field collected anopheline mosquitoes from Liaoning Province were amplified by using the specific ribosomal DNA ITS_2, digested with restriction enzyme Rsa I and Hinf I and analyzed on an agarose gel. **[Results]** PCR products of *Anopheles sinensis* were only digested with restriction enzyme Rsa I and shown two banes of 350bp and 200bp; PCR products of *Anopheles anthropophagus* were only digested with restriction enzyme Hinf I and shown a 410 bp banes; PCR products of *Anopheles lesteri* were digested with both restriction enzyme Rsa I and Hinf I and shown a 350bp band and a 400bp band respectively. PCR products of *Anopheles yatsushiroensis* were not digested with restriction enzyme Rsa I or Hinf I. **[Conclusion]** The established PCR-RFLP technique based on the genetic characteristics of ribosomal DNA ITS_2 region sequence can be used for genetic identification of the four anopheline mosquitoes, *Anopheles sinensis*, *Anopheles anthropophagus*, *Anopheles lesteri* and *Anopheles yatsushiroensis* within of *Anopheles hyrcanus* complex.

* Jiangsu Institute of Parasitic Diseases

ULTRASTRUCTURAL STUDY ON PHARYNGEAL ARMATURES OF SEVEN SPECIES OF SANDFLIES IN CHINA BY SCANNING ELECTRON MICROSCOPY

*GUO Dong-xing** *JIN Chang-fa* *HONG Yu-mei* *NI Bing*** *QIAO Zhong-dong**

[Objective] To observe the ultrastructure of pharyngeal armature of 7 species of sandflies in China. **[Methods]** The pharyngeal armatures of various sandflies were studies by scanning electron microscopy. **[Results]** The pharyngeal armature of sandfly consisted of pointed-teeth with various shape, number and arrangement among different species. **[Conclusion]** Such

difference may provide the morphological proof for identification of species.

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** Huadong Normal University

EVALUATION ON THE QUALITY OF SEROEPIDEMIOLOGICAL SURVEY FOR CYSTICERCOSIS AND HYDATIDOSIS IN CHINA

CHEN Ying-dan ZHOU Chang-hai WANG Ju-jun YUAN Zhong-ying
CHEN Jing-ying XU Yiang-zhen XU Long-qi*

[Objective] To evaluate the quality of seroepidemiological survey for cysticercosis and hydatidosis in China. **[Methods]** To re-test the total positive samples and part of negative samples by means of random sampling, following the same procedures in this survey, and then to evaluate the agreement of two tests with longsistency and Kappa value. **[Results]** Two tests showed that the positive agreement rate were 58.54% and 91.12%; the negative agreement rate were 98.83% and 96.58%; total agreement rate were 98.85% and 97.47%; Kappa value were 0.7139 and 0.9362. The reproducibility of cysticercosis was good and the reproducibility of hydatidosis was excellent. The lonsistency (identity) of results of Kappa test had significant difference. **[Conclusion]** The quality control was good in seroepidemiological survey for cysticercosis and hydatidosis.

* Jiangsu Institute of Parasitic Diseases

CLINICAL ANALYSIS OF 155 CASES OF PREMATURE RUPTURE OF MEMBRANES

*BO Wei DAI An-ping**

[Objective] To study the effects of premature rupture of membranes (PROM) on pregnancy outcomes. **[Methods]** Retrospective analysis is performed on delivery patients hospitalized with PROM (155 cases) and without PROM (564 cases with o pregnant complications). **[Results]** The rates of Cesarean section, preterm birth, asphyxiat and pneumonia of newboms in PROM group are significantly higher than those in the control group. **[Conclusions]** PROM is familiar complication associated with troubled baby delivery.

* The Second hospital of Chaohu city

CT FINDINGS OF THE OVARIAN ENDOMETRIOSIS CYST

*BO Wei　ZHANG Bei**

[Objective] To discuss the CT findings of the ovarian endometriosis cyst. **[Methods]** CT findings of 20 cases ovarian analyzed. **[Results]** There 25 cysts in 20 cases their CT feelers were as follow: ①They had a irregular outer fringe and a regular inner fringe without nodules. ② Satiations were seen in hr cysts, the wall of cysts could be enhanced regularly. ③values varied from watery to haemoid. ④ The characteristic feature was that daughter cysts lied outside of mother cysts. **[Conclusions]** CT play an important role in the diagnosis of this disease.

* Department of Radiology of Ovarian Endometriosis Ruijin Hospital

DNA SEQUENCES OF PARAGONIMUS SKRJABINI POPULATIONS FROM FIVE PROVINCES IN CHINA

*CHEN Ming-gang　CHANG Zheng-shan　CUI Ai-li　David BLAIR**
ZHANG Yong-nian　CHEN Shao-hong　FENG Zheng

[Objective] To study differences among *Paragonimus skrjabini (P. skrjabini)* populations from five provinces in China (Guangdong, Fujian, Yunnan, Hubei, and Sichuan) and *Paragonimus szechuanensis*. [Methods] DNA sequences were obtained from the ITS2 and CO1 genes and phylogenetic trees were constructed from the results. Sequences were also obtained from several other species of *Paragonimus* for comparative purposes. [Results] Although differences existed in the DNA sequence among *P. skrjabini* populations from five provinces, the differences were very small. There was also some resemblance between *P. miyazakii* from Japan and Fujian strains of *P. skrjabini*. [Conclusion] All studied populations can be regarded as different strains of *P.skrjabini*; *P.szechuanensis* is not a separate species but may be a geographical strain of *P. skrjabini.* We also found that *P. rniyazakii* may be synonymous with *P. skrjabini*.

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GENE CLONING, EXPRESSION AND SEROLOGICAL EVALUATION OF DIAGNOSTIC ANTIGEN EM18 FOR ALVEOLAR ECHINOCOCCOSIS

JIANG Li　FENG Zheng　XUE-Hai-chou　XU Xue-nian　QIU Li-shu

[Objective] To clone, express and serologically evaluate the Em18 antigen gene of *Echinococcus multilocularis* for diagnostic purpose. **[Methods]** Polymerase chain reaction(PCR) was empolymed for amplification of the target gene fragments which was than ligated with pET28a+ vector. The constructed plasmid was transferred into *E.coli* BL21(DE3) for evaluating

diagnostic value of the recombinant Em18 antigen. **[Results]** Two high-level expression clines (designated as ReEm18-1 and ReEm18-2) were obtained. ReEm18-1 showed the expected sequence, ReEm18-2 showed the same sequence but with 27 nucleotides deletion. The molecular weight of the two expression proteins was Mr 28 000 and 26 000, respectively. Serological evaluation by ELISA was carried out using sera from 101 patients with alveolar echinococcosis (AE), 27 with cystic echinococcosis (CE), 30 with cysticerosis (CC), 10 with hepatic cancer (HC), 9 with schistosomiasis (SJ) and 40 from healthy persons (NH) from both endemic and non-endemic areas. The results showed an overall sensitivity of 86.1% and 90.1% with ReEm18-1 and ReEm18-2 for AE sera, specificity 93.4% and 94.1%, positive predictive value 90.6% and 91.9%, negative predictive value 90.1% and 92.8% and efficiency 90.3% and 92.4%, respectively. The correlation analysis between the size of AE lesions and the serum absorbance reacted with recombinant Em18 antignes showed that there was a positive correlation between antibody level and the course of disease. **[Conclusion]** ReEm18 antigens are specific for AE diagnosis, and the serum antibody level displays a good correlation with the course of the disease at early stage. Similar results achieved by both ReEm18-land ReEm18-2 antigens.

WESTERN BLOTTING ANALYSIS OF SPECIFIC ANTIGENS FROM DIFFERENT COMPONENTS OF *ECHINOCOCCUS* METACESTODES

JIANG Li XUE Hai-chou QIU Li-shu FENG Zheng

[Objective] To analyze antigens for searching specific antigenic components for immunodiagnosis of echinococcosis. **[Methods]** Fourteen crude antigens from different tissues (cyst fluid, protoscoleces, laminated layer and germinal layer) of *Echinococcus granulosus* and *E.multilocularis* metacestodes and other 4 species of cestodes were analyzed by Western blotting. The differences of protein bands were compared for the 14 crude antigens by reacting with pooled sera from cystic echinococcosis (CE) and alveolar echinococcosis (AE) patients. **[Results]** Eleven protein bands from the antigens reacted nonspecifically with sera from bothe CE and AE patients were Mr 130 000, 100 000, 94 000, 80 000, 75 000, 66 000, 62 000, 52 000, 38 000, 32 000, 24 000. The highly specific protein bands recognized by AE sera were Mr 120 000, 109 000, 86 000, 59 000, 43 000, 28 000, 20 000, 18 000, and by CE sera were Mr 41 000, 40 000, 22 000, 16 000 and 12 000. **[Conclusion]** Different antigens shared by the two species of *Echinococcus* were examined and potential antigenic proteins specific for AE or CE sera were found, providing useful information for further identifying specific antigens for immunodiagnosis.

§5. 获奖项目介绍

我国并殖吸虫的遗传变异

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本项目研究主要并殖吸虫虫种的分类地位、卫氏并殖吸虫种型与致病性的差异，以及重要虫种地理分布。

从 11 个并殖吸虫流行省 22 个县收集并殖吸虫虫种标本，通过形态学观察和分子生物学技术，解决了斯氏并殖吸虫与四川并殖吸虫是否为同种异名这个争论长达 40 年的问题，即四川并殖吸虫实为斯氏并殖吸虫。并证明我国 5 省斯氏并殖吸虫与泡囊并殖吸虫及日本的宫崎并殖吸虫为同一虫种。

DNA 序列分析及构建基因遗传树表明三并正并殖吸虫为并殖属下的变异。

对比较少见的 5 种并殖吸虫形态学观察及分子生物学检测确定了它们的分类地位：即河口并殖吸虫与斯氏并殖吸虫接近，而勐腊、白水河、曼谷、与象山并殖吸虫彼此较为接近，但又互相独立，分类地位介于斯氏与卫氏并殖吸虫之间。

通过对成虫染色体检测，虫卵、囊蚴测量与临床观察及流行病学调查，发现二倍体卫氏并殖吸虫亦可引起肺部病变及咯血，纠正了国内曾经流行的只有三倍体卫氏并殖吸虫才能引起人肺部病变及症状的片面观点。

建立应用 DNA 扩增方法检测极微量的一个虫卵或囊蚴进行虫种鉴定的技术。

综合分析了国内、外文献资料，用英文写成《我国的并殖吸虫与并殖吸虫病》，报道了我国并殖吸虫各个方面的研究进展，并报道我国 25 个省 644 个县（市）有并殖吸虫传播，绘制了全国并殖吸虫分布图及准确到县的各省并殖吸虫分布图，对我国并殖吸虫的分布提供了全面的信息。

此项研究将并殖吸虫遗传变异与分类学研究提升到细胞学与分子生物学水平，为搞清楚我国分类混乱的并殖吸虫种群关系取得了重要的结果。

成果验收或鉴定日期：2005 年 1 月 28 日

组织验收部门：卫生部

评审或验收结论：本项研究工作量大，内容丰富，资料系统全面，研究手段先进，结论可信，在并殖吸虫研究的广度和深度上为近 30 年来国内外所未见。成果具有创新性、先进性，具有重要的学术价值，对我国并殖吸虫病防治和科研具有指导意义，达到国际先进水平。

项目来源：美国 NIH 资助（资助号 1 P50 A139461）

中国人体寄生虫和媒介标本收集、整理和保存

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[目的] 整理多年收集保存的吸虫、绦虫、线虫、原虫和蚊、白蛉及螺类标本，并进行分类。收集近年来发病率呈上升趋势的食源性寄生虫标本和人畜共患寄生虫标本。建立重要人体寄生虫和医学媒介保种虫库。探索寄生虫标本现代化科学保存方法，为寄生虫病原分子生物学的研究提供种质资源。

[方法] 参照《中国人体寄生虫分布与危害》一书，编制人体寄生虫和医学昆虫、医学贝类标本目录。按“目录”，整理和保存各种寄生虫和媒介标本。缺遗补漏，重点收集食源性寄生虫和人畜共患寄生虫标本。对稀有标本进行摄像存档。建立标本收集、整理和保存的支撑条件。建立寄生虫和媒介标本数据库。制作人体寄生虫和媒介网页建立重要人体寄生虫和医学媒介保种虫库。初步建立中国人体寄生虫和媒介标本馆

[结果]

1. 基本建成中国人体寄生虫和媒介标本展示馆
2. 保存重要人体寄生虫和媒介活体标本
3. 建立中国人体寄生虫和媒介标本数据库和网络，做到全国范围相关单位信息共享
4. 初步建立中国人体寄生虫和媒介标本咨询中心

[结论] 中国人体寄生虫及媒介标本馆基本建成，并向社会开放，提高社会群体的对寄生虫病的防范意识。寄生虫和媒介病原种质资源得到科学化管理。人体寄生虫病网络的建成，成为寄生虫病健康教育的一个新场所。促进寄生虫及媒介标本与国内外同行的交流，做到资源共享。

验收日期：2004 年 6 月 28 日
组织验收部门：国家科技部
项目来源：国家科技部中央级科研院所科技基础工作专项资金

长江流域典型环境改变对血吸虫病传播的影响

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[目的] 应用地理信息系统和遥感技术（GIS/RS），揭示退田还湖、平垸行洪区典型环境改变对钉螺孳生和血吸虫病传播的影响；研究并提出防止血吸虫病传播的综合整治方案。

[方法] 通过鄱阳湖地区洲滩的相关地面数据收集，结合卫星遥感图片的分析，建立 GIS/RS 相关模型，对鄱阳湖退田还湖区以及三峡库区进行预测和监测。

[结果] 该模型在鄱阳湖区进行校正后，估计鄱阳湖区的有螺区域为 708 平方公里，与实际有螺面积（748 平方公里）非常接近，符合率达 95%以上。运用该模型对鄱阳湖区域的退田还湖区进行了跟踪调查，和对三峡建坝后区的库的回水区和 155-175 米水位范围有可能形成钉螺孳生地，进行初步监测。

[结论] 通过移民前后居民的社会、经济、行为等因素分析，发现迁至非疫区的居民的血吸虫病的一些危险因素正在减弱，这必定会影响到疫情的发展。模型将快速评估鄱阳湖地区的退田还湖区抑制钉螺生长发育的不同的土地利用和开发形式。对如何正确引导和利用滩地和综合治理，减少钉螺孳生环境和血吸虫病传播提供科学的依据。

成果验收或鉴定日期：2004 年 7 月

组织验收部门：卫生部科教司

评审或验收结论：该项目选题针对性强，项目的总体目标和考核目标明确，运用 3S 技术建立的钉螺生态模型对界定钉螺分布范围具有一定的创新性。通过对退田还湖、平垸行洪地区的调查，掌握了当前典型生态环境改变对血吸虫病传播的一般规律，并提出了相应的防治对策。研究结果对指导全国类似地区血防工作以及为政府提供制定三峡库区退田还湖、平垸行洪地区综合治理规划具有实用价值。

该项目已按计划完成全部的研究任务，研究资料详实可靠，项目经费使用合理。建议将该项课题的研究技术进一步在其他流行类似地区推广应用。

项目来源：国家科学技术部科技基础性工作和社会公益研究专项项目

天然植物成分瑞香素的抗疟作用

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[目的] 研究中草药来源的瑞香素作为一类全新结构、全新机制抗疟药的先导化合物地位，为针对分子靶标的抗疟新药设计提供科学依据。

[方法] 首先采用抗疟药体外、体内筛选技术，在恶性疟原虫体外培养中测试瑞香素杀裂殖体活性，并在感染伯氏鼠疟原虫的小鼠中测定瑞香素的体内抗疟活性，再采用约氏疟原虫－斯氏按蚊－ICR 小鼠模型研究瑞香素抗红外期疟原虫的作用，并采用抗疟药溶血毒性体外测定法及高效液相色谱定量测定脂质过氧化产物法检测瑞香素对伯氨喹溶血毒代谢产物 AQD 诱发溶血与红细胞膜脂质过氧化的抑制率。此外，还在恶性疟原虫体外培养中检测瑞香素和去铁胺的杀裂殖体活性，同时用荧光探针 calcein 测定瑞香素和去铁胺的铁螯合能力，以确定瑞香素抗疟作用与其铁螯合能力的关系。为探索抗疟作用分子靶标，进一步在恶性疟原虫体外培养中以 SOD 试剂盒检测瑞香素、瑞香素-铁复合物及去铁胺对疟

原虫 SOD 活性的影响。

[结果] 首次发现瑞香素具有抗溶血与抗红细胞膜脂质过氧化的作用；在体外实验与实验动物模型中均证实其对疟原虫的杀裂殖体活性。此外还在约氏疟原虫-斯氏按蚊-小鼠模型中发现伍用瑞香素后伯氨喹对红外期疟原虫的治疗剂量可以减少一半。上述结果在国内外文献中尚未见报道。本项目还首次发现，瑞香素很可能是疟原虫体内的一些含铁生物大分子的抑制剂。如超氧化物歧化酶（SOD）很可能是瑞香素抗疟作用的分子靶。此外，实验证据还显示瑞香素抑制疟原虫滋养体－裂殖体的 DNA 合成。上述发现未见国内外文献报道。

[结论] 中草药来源的瑞香素可作为一类全新结构、全新机制抗疟药的先导化合物。

成果验收或鉴定日期：2004 年 1 月 20 日

组织验收部门：卫生部

评审或验收结论： 该项目研究设计科学，数据可靠，结论合理。鉴定委员会全体成员一致同意该项目通过科技成果鉴定，并评价该项成果具有创新性，达到国际先进水平。

项目来源：由中国预防医学科学院科研基金项目“瑞香素对疟疾根治药伯氨喹增效减毒的实验研究”，卫生部科研基金项目“中草药铁螯合剂研究开发间日疟根治新药”，以及国家自然科学基金项目“中草药铁螯合剂 RXS 抗疟作用机理的研究”组成。

全球气候变暖对中国血吸虫病传播影响的研究

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本项目系国家自然科学基金资助项目，项目批准号为 30070684，项目执行期自 2001 年 1 月起到 2003 年 12 月止，课题组在规定的时间内完成了各项研究任务，经国家自然科学基金委员会生命科学部审核，于 2004 年 8 月准予结题；2004 年 11 月 19 日通过了由江苏省科学技术厅组织的成果鉴定。

针对近一个多世纪以来全球气候逐渐变暖的现象，综合运用多学科技术，如医学、生物学、天文地理学、气象学、计算机应用技术等，开展了气候变暖对血吸虫病传播的影响范围、程度和机制等方面的研究，对血吸虫中间宿主—钉螺的适生性、血吸虫在钉螺体内生长发育的生理学指标进行了定量研究，建立了温度-钉螺适生性、气候-血吸虫传播等模型，利用 NADPH-d 酶组织化学及 RT-PCR 方法，研究了温度对钉螺体内 NOS 活性影响、NOS 活性与钉螺代谢之间的定量关系，探索了气候变暖可能对钉螺北移的影响机制，并再运用地理信息系统和卫星遥感技术预测了血吸虫病流行扩散趋势，对全球气候变暖是否导致血吸虫病北移做出了定量回答，画出了潜在扩散趋势图。

通过实验室和现场研究，获得了钉螺和血吸虫受环境温度影响的多项关健性生理指标，包括钉螺的越冬冬眠温度为 5.87℃，钉螺完成世代发育（从螺卵发育至成熟产卵）的平均有效积温为(3846.28±32.59)日度，日本血吸虫毛蚴感染钉螺的最低临界温度为 3.24℃，

日本血吸虫在钉螺体内的发育起点温度为（15.17±0.43）℃，日本血吸虫幼虫在钉螺体内发育成熟至尾蚴开放的平均有效积温常数为（842.91±143.63）日度。这些生理性指标的获得为定量预测气候变暖对血吸虫病传播的影响程度及血吸虫病流行区的北移提供了理论参数。

首次将一氧化氮酶(NOS)酶组织化学技术引入钉螺生殖生理机制的研究，并发现了钉螺神经节 NOS 的活性随着温度变化而变化，钉螺生殖腺 NOS mRNA 的表达量与温度升高呈相关。证实了冬、春两季温度升高时，可通过钉螺体内 NOS 的基因调节或酶活性变化，促使钉螺的繁殖力增强，有利于钉螺在这一地区内的生存与繁殖。本研究还构建了血吸虫病气候-传播模型，分析得出了 2030 年和 2050 年我国钉螺分布北界预测图,预测到江苏北部洪泽湖地区为气候变暖引起血吸虫病流行区北移的主要潜在危险区。提出了我国今后在全球气候继续变暖的情况下，应加强中国东部地区血吸虫病扩散的监测工作。

研究发现的多项钉螺和血吸虫受环境温度影响的关键性生理指标，在血吸虫病的流行程度预测和趋势分析中有着广泛的意义和重要的作用;研究所建立的许多方法，不仅可推广应用于不同地区疾病控制的研究，而且还可应用于其他相关生物领域研究，并为评估和研究我国南水北调工程对血吸虫病潜在影响提供了方法和理论依据。

成果鉴定日期： 2004 年 11 月 19 日

组织鉴定部门： 江苏省科学技术厅

评审或验收结论：

本研究项目设计合理，方法科学，数据准确，论证充分，结论可靠，在理论上丰富了钉螺生态学认识，在实践上，综合运用多学科技术，对今后气候变暖可能造成血吸虫病北移的远期影响进行了预测，并绘制了血吸虫病北移的潜在流行区范围，为加强我国东部地区血吸虫病北移扩散监测的未来决策提供了科学依据。研究成果达国内领先，国际先进水平。

项目来源： 世界卫生组织 TDR

中国西部包虫病和黑热病的分布调查研究

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[目的] 对我国西部包虫病、黑热病的分布、流行现状及趋势作出评估，并对西部开发中的疾病预防与控制工作提出建议。

[方法] 包虫病：对新疆、甘肃、四川不同生态环境，具有代表性的地点作流行病学调查，应用血清学方法和 B 超对人群进行普查，观察人群包虫病流行情况；病犬驱虫，观察犬的

感染情况；感染虫株的鉴定。

黑热病：对黑热病的不同景观地带进行流行病学调查，对人群作利什曼素皮内试验，评估当地是否为疫区和以往黑热病的流行情况；以 rk39 免疫层析试条进行犬的血清学检测，调查犬利什曼病的情况；调查媒介白蛉种类和分布的情况；

[结果] 包虫病：经流行病学、血清学调查和 B 超调查，绘制中国利什曼病分布图；新疆维吾尔自治区是我国包虫病高发地区之一，全区 85 个县市中，除且沫县以外，84 个县市均有病例发生。

甘肃省是囊型和泡型包虫病混合疫区。病例分布在省内 13 个市（地、州）的 52 个县（市、区），其中 15 个县调查人群平均患病率为 0.82%，6 个县畜间调查平均患病率羊为 684 个县市均有病例发生。5.45%、牛为 56.38%，4 个县犬 Eg 的平均感染率为 21.55%。包虫病在中部和东部黄土高原、西部河西走廊农业区、西南部甘南高山草原牧区 84 个县市均有病例发生。

黑热病：

经流行病学、皮试和血清学调查，绘制中国利什曼病分布图；1996－2001 年 98.6％的黑热病病人发生在新疆、甘肃、四川三省区，内蒙古、陕西、山西三省区仅占 1.44％，中国西部黑热病病人数在逐年上升，2001 年的黑热病病人数与 1996 年相比上升 51.7％。新疆是目前我国黑热病病人数最多的地区，喀什地区主要是人源型黑热病流行区，每年发病人数占全疆的 90％；甘肃也是我国黑热病的主要病区，犬的阳性率为 3.7％－6％，是该地区的主要传染源；四川省黑水县黑热病流行区的利什曼病病犬高达 14.8％，加上四川省流动人口较多，在流行区感染的病人向非流行区流动，成为新的传染源。

黑热病流行因素随地理景观不同，媒介白蛉的种类也有区别。我国黑热病的传播媒介有中华白蛉、吴氏白蛉、长管白蛉和亚历山大白蛉四种。中华白蛉是甘肃、四川等地黑热病的主要传播媒介，是分布广、数量大的优势蛉种；吴氏白蛉、长管白蛉和亚历山大白蛉是新疆地区黑热病的传播媒介。

我国西部为内脏利什曼病的高发区，新疆和甘肃以 rk39 重组抗原检测抗体阳性率分别为 3.1％和 8.66％，显示隐形感染或亚临床型患者的存在。

[结论] 中国西部利什曼病仍在流行，中国西部 6 省区尚有 43 个县有利什曼病病例的报道，内脏利什曼病发病数趋于上升趋势。新疆是目前中国利什曼病发病人数最多的地区，占全国的病人数的一半以上，涵盖了我国黑热病的不同类型，情况复杂，病人分散，人源型黑热病流行区仍保持较高的发病率，而且范围有所扩大。流动人员的增加，加速内脏利什曼病的传播，四川省尤为突出。甘肃和四川犬内脏利什曼病与人的内脏利什曼病同时存在，有病犬的地方就有病人，两病有着极为密切的关系。

包虫病是危害西部地区发展和人民健康最严重的寄生虫病。新疆、甘肃、四川三省 17 个县 20 个点包虫病的抽样调查结果表明，包虫病的流行形势依然十分严峻，不容忽视。细粒棘球蚴病传染源的大量存在是本病高度流行的主要原因。泡球蚴病的野生动物传染源种类多数量大。控制传染源十分困难。家畜虽然不是泡球蚴适宜的中间宿主，但由于川西藏区牧场被犬、狐粪污染严重，牦牛、绵羊、猪等大牲畜的感染率可高达 6.20%，7.5%和 3.1%。人、牲畜与野生动物的普遍感染，表明四川西部青藏高原是世界上泡球蚴病流行最

严重的地区。

成果验收或鉴定日期：2004 年 6 月

组织验收部门：科技部

项目来源：社会公益研究项目

§ 5. A WARDED PROJECTS

STUDIES ON THE GENETIC DIVERSITY OF *PARAGONIMUS* IN CHINA

CHEN Ming-gang[1] *CHANG Zheng-shan*[1] *David Blair*[1] *CHEN Shao-hong*[1]
ZHANG Yong-nian[1] *FENG Zheng*[1] *HONG Jia-lin*[2] *CUI Ai-li*[1] *WU Bo*[2] *SHEN Bing-gui*[1]

Accomplishment units

1. National Institute of Parasitic Diseases, China CDC
2. Yongjia Institute of Paragonimiasis

The study on the genetic diversity has been carried out to solve the classification problems of several important species of *Paragonimus*, to observe the pathogenic diversity of two karyotypic forms of *Paragonimus wertermani* to humans, and to study the parasite biology and its geographical distribution of several major *Paragonimus* in China.

Specimens of *Paragonimus* were collected from endemic areas of 22 counties in 11 provinces. Animal infection with the parasite was carried out. A large number of *Paragonimus* with different species were collected for the study of genetic diversity of the parasite.

Not only the traditional morphological technique was used, but also molecular biological technique, was carried out. The study demonstrates that *Paragonimus sichuanensis* (Chung & Ts'ao, 1962) was really the synonym of *Paragonimus skrjabini* (Chen 1959), a 40-year long dispute between two famous scientists in China with world-wide influence. Also demonstrated is that *P. skrjabini* from Sichuan, Hubei, Yunnan, Fujian and Guangdong is most probably the same species with *Paragonimus veocularis* (Chen & Li, 1979) and *Paragonimus miyazakii* (Kamo et al., 1961). *Paragonimus tuanshanensis* is most probably the synonym of *Paragonimus heterotremus*.

DNA sequence analysis and construction of phylogenetic tree have shown that *Euparagonimus cenocopiosus* can be placed within the genus *Paragonimus* in the analyses, and is not necessary to place it as a new genus. The name of *Euparagonimus cenocopiosus* is suggested to be changed into *Paragonimus cenocopiosus.*

Five comparatively rarely seen *Paragonimus*, i.e., *P. hokuoensis, P. menglaensis, P. paishuihoensis, P. bangkokensis* and *P. xiangshanensis* were studied on their metacercariae, adult worms with morphological and molecular biological techniques. The results show that *P. hokuoensis* is quite close to *P. skrjabini*, while the others are close to each other, but are separate species. Their classification status is between *P. skrjabini* and *P. westermani*.

Karyotypic studies on gonad cells from adult flukes collected from four localities in Yongjia and harvested from 15 experimentally infected animals (9 cats and 6 dogs) showed that they were all diploid. The results of measurement of the dimensions of the parasite eggs, metacercariae from crabs and adult flukes, have also suggested that the form of *P. westermani* in

Yongjia is the “small type”, or diploid form. Epidemiological and clinical surveys in the four localities showed that paragonimiasis westermani in those areas were with pulmonary symptom-hemoptysis. The results showed that not only the triploid form of the fluke (“large type”) can cause pulmonary symptoms, but also diploid form of the fluke can also cause hemoptysis, that is against the common idea prevalent in China.

With an egg from the sputum of a paragonimiasis patient, or a metacercaria from a crab, both with very few amount of DNA, can be preliminary identified for their species. The technique was firstly established in our laboratory. This provides a quick clinical diagnosis in a hospital or identification of endemic species of the fluke in the field.

Colletion of 788 literature on *Paragonimus* in the scientific journals both at home and abroad since 1930 when the first thesis on *Paragonimus* was published in the history, until 2000, was made and the literature was analysed. A comprehensive review paper was written and published in English as a special issue of the journal of parasitology. The paper reported the progress of *Paragonimus* research, and for the first time, also reported that the transmission of *Paragonimus* had been seen in 644 counties in 25 provinces in humans and animal reservoirs. Distribution maps of the endemicity of *Paragonimus* were drawn both at national level and provincial level taking county as a unit which will give all-round information to parasitologists and health workers both at home and abroad.

Through the research, the genetic diversity and classification of *Paragonimus* have been raised from classic morphological study to cellular and molecular biological levels. The confusion on the classification of *Paragonimus* populations has been solved to some extent through the study.

Date of appraisal: 28 Jan 2005

Appraisal organizer: Ministry of Health, China

Conclusion of the appraisal: This study has the following characteristics: heavy work load, substantial content, providing systemic and comprehensive information, using advanced measures. Its conclusions reached are believable. The width and depth of the study on *Paragonimus* has not been seen during the past 30 years both at home and abroad. The achievements of the project are advanced and have provided us new ideas, and are of important scientific value. The results possess guiding significance to the control and research of paragonimiasis in our country. The level of the study is internationally advanced.

Funding of the project: Supported by the National Institute of Health, USA (Project No. 1 P50 A139461)

IMPACT OF TYPICAL ENVIRONMENTAL CHANGES OF THE YANGTZE RIVER TO THE TRANSMISSION OF SCHISTOSOMIASIS

GUO Jia-gang[1] *ZHU Rong*[1] *HE Zhang-ying*[2] *NIU Hong-feng*[3] *CAO Chun-li*[1] *YU Qing*[1] *BAO Zi-ping*[1] *ZHU Hong-qing*[1] *DANG Hui*[1] *WANG Qiang*[1]

Accomplishment units

1 National Institute of Parasitic Diseases, Chinese Center for Disease Control and Prevention
2 Jiangxi Provincial Institute of Parasitic Diseases
3 Chongqing Municipality Center for Disease Control and Prevention

[Objective] To reveal the relationship between snail breeding and schistosomiasis transmission after typical environmental changes by returning the cultured land into lake, and breaking the levees for storage of flood water by GIS/RS, and to study and bring forward comprehensive strategy and approaches for schistosomiasis control in these areas.

[Methods] GIS/RS models were built by comparing correlative ground data and some characteristics of satellite images and these models were used to predict both the trend of schistosomiasis prevalence in the Poyang lake regions after returning the cultured land into lake and surveillance for the Three Gorges reservoir areas.

[Results] The GIS/RS models were set up and validated in the Poyang lake regions. It was estimated there were a total of 708 square kilometers of the snail habitats in the Poyang lake region. The result is very close to the areas of real snail habitats in the Poyang lake region (748 square kilometers) with an accordance rate greater than 95%. The model was used to track the environmental changes after returning the cultured land into lake and for preliminary surveillance of the Three Gorges reservoir areas which is located between 155 and 175 meter above the see level.

[Conclusion] Analysis of the social factor, economic and behavior factor among transmigrates before and after the transfer in combination with GIS/RS modeling, it reveals that several risk factors have been reduced when inhabitants moved to non-endemic areas, which leads to the changes of endemic situation. The model will supply a rapid assessment to the areas where land utilization and development by restraining the growth of *Oncomelania* snails in these areas after the cultured land was returned into lake. It will provide a scientific methods in exactly leading and utilizing beach lands, reducing snail habitats and schitosomiasis transmission, comprehensive strategy and approaches for these areas.

Date of appraisal: July 2004.

Appraisal Organizer: Department of Science and Education, Ministry of Health

Conclusion of the appraisal: The project has the pertinence in subject selection and its total aim and examination goals are clear. Using 3S techniques to set up biological model of *Oncomelania* snails has the nature of innovation. Grasping current rule of schistosomiasis transmission with representative biological environment shift at present and putting forward

relevant control strategies via investigation of areas after returning cultured land into lake and breaking the levees for storage of flood water. The study results have practical value in guiding schistosomiasis control in similar endemic areas after returning cultured land into lake and breaking the levees for storage of flood water in the Three Gorge water reservoir area and it is of practical value for governments to design comprehensive control layout for schistosomiasis control.

According to the project plan, the total research work has been accomplished completely and the research data are circumstantial and reliability, whereas the expenditure of project was reasonable. It is suggested to further expand the application of the techniques of the project in other similar endemic areas.

Funding of the Project: The Special Program for Scientific Foundation and Social Public Welfare funded by the Ministry of Science and Technology, P.R.China

ANTIMALARIAL EFFECT OF DAPHNETIN, A HERB-ORIGINATED COMPOUD

NI Yi-chang Wang Qin-mei MO Lin-yun LIU Yun-guang WU Jia-tong GUO Jian WANG Ming-jie NI Qi-zhen CAI Yue TAO Yi

Accomplishment units:
National Institute of Parasitic Diseases, Chinese Center for Disease Control and Prevention

[Objective] To investigate the antimalarial effect and its mechanism of action of Daphnetin, a herb-originated compound

[Methods] The schizontocidal activity of daphnetin was tested in P.falciparum in vitro and in mice infected with P. bergei in vivo while the anti-exoerythrocytic stages effect tested in P.yoelii-Astephens-ICR mice system. The anti-hemolytic and anti-membranous lipid peroxidation effects of daphnetin were assayed by in vitro assay and HPLC. Furthermore, the relation between in vitro antimalarial activity of daphnetin and its iron-chelating activity was investigated by the fluorescent probe calcein. The effect of daphnetin, daphnetin-Fe complexes and desferrioxamine B on SOD activity of P.falciparum was determined with a SOD test-kit.

[Results] It is found for the first time that daphnetin exhibits activity of anti-hemolytic and anti-membranous lipid peroxidation of erythrocytes. The shizotocidal effect of daphnetin was identified in both in vitro and in vivo experimental systems. Combined with daphnetin, the curative dose of primaquine for exo-erythrocytic parasites could be reduced by 50% in the system of P.yeolii-A.stypheni-ICR mice. For the mechnism of action, it is also found for the first time that Daphnetin may be an inhibitor to the containing iron molecules in plasmodium

parasites while SOD may be the molecular target of daphnetin. Furthermore, daphnetin may inhibit DNA synthesis in parasites.

[Conclusion] Daphnetin- a Chinese herb originated chemical could be served as a leading compound of antimalarials with new structure and novel mechanism.

IMPACT OF GLOBAL WARMING ON TRANSMISSION OF SCHISTOSOMASIS IN CHINA

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In consideration of the changes of global climate and temperature warming during last century, investigation on impact of global warming on scales, intensity of schistosomiasis transmission and its mechanism was carried out by using multi-technologies on medicine, biology, areography, metrology, computer science, etc. The research focused on quantitative indexes on Oncomelania physiology, such as suitability of Oncomelania snails in environment, development of Schistosoma japonicum within Oncomelania snail. Consequently, the models on temperature-suitability for snail development and climate-transmission of S.japonicum were established, and the enzyme activities of snail NOS related to temperature and its quantitative relation with the metabolism of snail were explored by application of NADPH-d enzyme-histochemistry and RT-PCR approach which result in understanding the mechanism of Oncomelania snail dispersal northward impacted by global warming. Through application of geographic information system and remote sensing data employing the physical index found in above investigations, the tendency of schistosomiasis transmission expended northward was predicted quantitatively by creating the potential risk map for schistosomiasis transmission impacted by global warming.

Through the investigations both in laboratory and field, several indexes related to the physiological parameters of both Oncomelania snail and S. japonicum were determined, including snail presented hibernation at 5.87℃, the mean effective accumulated temperature for

snail development during a life cycle was (3846.28±32.59) degree days, the lowest temperature for S.japonicum infecting snail was at 3.24℃, the lowest temperature for S.japonicum to initial development within snail was at （15.17±0.43）℃, the mean effective accumulated temperature for S.japonicum completed the development inside snail was（842.91±143.63）degree days. Those physical indexes provide the theoretical variables to predict the impact of global warming on transmission of schistosomiasis.

It is the first time to introduce the NOS enzyme histo-chemistry methods into investigation on mechanism of physi-reproduction of Oncomelania snai. By using this approach, we found the activity of NOS in snail ganglions changed with the temperature changes, and a positive relationship between amount of NOS mRNA expression in snail gonad and temperature. It is demostrated that the capacity of snail reproduction increased through the NOS gene adjustment or changes of enzyme activity in Oncomelania snail when temperature incerase in Spring or Fall, which introduce the Oncomelania suvive and reproduction in a new habitats. In this project, we established a climate-transmission of schistosomiasis model, create potential risk mapps for snail expension northward in 2030 and 2050, respectively, which tell us the most risk areas will be located in the Honghu lake due to global warming. A standardized surveillance system was putforward for eastern China under the hypophosis that global warming impact the transmission of schistosomiasis in China.

It is also found that those indexes of physical parameters of Oncomelania snail and S. japonicum were very useful when study on the transmission tendency analysis and prediction of transmission intensity, which is able to be used in not only disease control but also in other relevant biological fields, and provide an approach to evaluate precisely the impact of south-north water transfer project on schistosomiasis in China.

§6. 研究生毕业论文研究报告摘要

华支睾吸虫病诊断靶抗原的寻找及其免疫诊断价值的评估

陈叙（硕士研究生）　　导师：冯正

[目的] 本研究通过对华支睾吸虫（*Clonorchis sinensis*）表达序列标签（expressed sequence tags, ESTs）的测定和生物信息学分析，寻找有效的诊靶抗原基因，通过克隆和表达获得重组抗原，并对其免疫诊断价值进行初步评估；研究用华支睾吸虫单克隆抗体（monoclonal antibody, MAb）检测病人粪便样品中的华支睾吸虫 ES 抗原的方法。**[方法]** 1、EST 的产生：从建成的华支睾吸虫成虫λZAPⅡcDNA 文库随机挑选 cDNA 克隆，经 T3 引物由 5’端单向测序后，将所得到的序列进行编辑，去除载体部分、Poly(A)尾以及难以辨认的区域,长度在 150bp 以上，不确定碱基在 3%以下的序列被认为是有效的 EST；2、生物信息学分析：包括聚类分析、BLAST 分析、分泌蛋白/膜蛋白预测、基因表达频率分析（统计学分析），寻找可能与华支睾吸虫病诊断相关的基因；3、克隆表达：用 PCR 方法从含有全长的 cDNA 克隆扩增出所需基因序列，亚克隆至 pET28-a 载体中，IPTG 诱导重组蛋白的表达；4、重组蛋白的初步评价：用 Ni-NTA Agarose 柱（QIAGEN）亲和层析得到纯化重组蛋白，通过 Western blot 以及 ELISA 方法评估表达产物的免疫诊断价值；5、单克隆抗体制备：以匀浆法制备华支睾吸虫成虫粗抗原（crude somatic antigen），通过收集成虫体外培养上清液的方法获得华支睾吸虫 ES 抗原（excretory-secretory antigen），以粗抗原和浓缩的 ES 抗原免疫 BALB/c 小鼠，制备单克隆抗体；6、单克隆抗体的筛选及初步检测：通过血清抑制试验对获得的单克隆抗体进行筛选，对筛选出的单克隆抗体进行亚类和特异性的鉴定，并应用于双抗体夹心 ELISA 方法以检测病人粪便样品中的华支睾吸虫 ES 抗原。**[结果]** 1、总共获得的 5759 个有效的 ESTs，其中 1727 个(29%)与已知基因匹配，312 个(5%)与已知基因不匹配，其余 3800 个(66%)代表新的 ESTs；2、聚类分析显示共产生了 1288 个簇(cluster)，包括 869 个单拷贝序列(singleton)；3、经预测得到了 23 个可能的分泌蛋白和 196 个膜蛋白，与公共数据库中的数据同源性不高或无同源性，可能是新发现的膜蛋白和分泌蛋白；4、成功克隆和表达了 6 个华支睾吸虫基因，Western blot 结果显示其中 5 个重组蛋白具有抗原性；5、ELISA 试验的结果显示：纯化的重组蛋白 Cs782 与华支睾吸虫病患者血清反应阳性率为 90%，与正常人血清反应阳性率为 5%；6、共获得 31 株华支睾吸虫单克隆抗体阳性克隆，按血清抑制试验的结果将其分为 5 类。选取其中 5 株单克隆抗体（Csxj35、Csxj39、Csxj43、Csxj63 和 Csxj65）进行亚类鉴定和特异性鉴定。结果表明它们与血吸虫成虫粗抗原、虫卵抗原以及卫氏并殖吸虫（*Paragonimus westermani*）成虫粗抗原皆无交叉反应，显示出较好的特异性；7、应用上述 5 株单克隆抗体检测华支睾吸虫病患者粪便样品中的 ES 抗原，结果发现：单克隆抗体 Csxj39 在检测正常人样品时全部为阴性，检测 8 例病人样品时有 1 例假阴性（EPG≤1000）；单克隆抗体抗 Csxj63 能检测出的最低的华支睾吸虫抗原量达 5ng，它能够检测出所有患者的样品，在检测 3 例正常人样品时存在 1 例假阳性。**[结论]** 1、得到了 5759 个有效的华支睾吸虫 ESTs；2、获得了一批潜

在的与免疫诊断相关的基因；3、成功表达了 6 个基因，重组蛋白 Cs782 的 ELISA 结果表明它检测华支睾吸虫病患者血清抗体的阳性率为 90％，与正常人血清反应阳性率为 5%，可能具有一定的免疫诊断潜能；4、获得 31 株华支睾吸虫单克隆抗体阳性克隆，筛选出其中 5 株应用于病人粪便样品 ES 抗原的检测，其中单克隆抗体 Csxj63 和 Csxj39 有较好的敏感性（Csxj63 可以检测出最少为 5ng 的 ES 抗原），具有一定的免疫诊断价值。

日本血吸虫病家族聚集性的初步研究

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[目的] 为了探索我国血吸虫病的家庭聚集性现象与家族聚集性的内在联系，我们选择了江西鄱阳湖区湖区血吸虫病流行村，研究血吸虫家庭病人虫卵数在家庭和家系的分布规律，探讨日本血吸虫病在家庭内的分布以及家庭在血吸虫病的传播中的作用，定量研究血吸虫感染和家庭的遗传易感性以及一些共同的危险因素之间的关系，为研究日本血吸虫病的遗传因素的研究提供一定的线索，分析不同家系中感染与疫水接触的关系以及家系成员的虫卵数的分布情况，探讨日本血吸虫病遗传因素在血吸虫病感染过程中的作用，为进一步研究血吸虫病的易感人群与家系的关系奠定基础。**[材料与方法]** 本次研究选择江西省九江市都昌县的塘美行政村作为实验点，2002 年对全村的 1064 人进行了 KATO-KATZ 病原学检查，并对其中的 1015 人进行了问卷调查，49 人失访。2003 年随访到 418 人，通过家系调查，追踪 5 代内的父系的血缘关系，共随访到 162 个核心家庭，其中 308 人，构成了 34 个家系，110 人未能追踪到其家系。2003 年 12 月份,进行了一次回顾性的疫水接触调查。**[结果]** 1．在江西塘美村，血吸虫感染病例的家庭聚集性现象在 2002 年和 2003 年的调查中重复出现，说明该地区血吸虫感染病例的家庭聚集性现象的出现不是偶然的；实验区日本血吸虫感染者的亲属更易于感染，而且，血缘关系越近的亲属，发病的机会越大；2．不同的家系，疫水暴露的水平是不同的，疫水暴露在不同家系成员间的分布是有显著性的差异的；3．病人虫卵数的分布不是均匀分布在各家系成员中的，各个家系成员间在虫卵数上是有显著性的差别的；家系（PEDID）和疫水接触（W C group）两因素对虫卵数的变异都具有显著性的意义，家系（PEDID）所导致的变异要大于疫水接触（W C group）所导致的变异。**[结论]** 在家庭和家系两个不同的水平对日本血吸虫感染做了深入的分析，本次研究认为疫水接触是日本血吸虫感染的重要因素，但是通过对日本血吸虫感染在不同的家系间的分析，不能排除日本血吸虫的感染抑或受到遗传因素的影响。

日本血吸虫肌相关蛋白疫苗候选抗原的研究

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血吸虫病是严重危害人类健康的人畜共患寄生虫病。根据世界卫生组织 2002 年统计，血吸虫病流行于 74 个国家和地区，估计有 6 亿多人口受威胁，近 2 亿感染者。我国经过 50 多年的有效防治，大部分流行区已控制或基本控制血吸虫病的传播。血吸虫病流行的省、县、乡镇较防治初期分别减少了 42%、40%和 53%，但我国血吸虫病防治的形势依然严峻。

近年来血吸虫病又死灰复燃，急性血吸虫病人逐年增加，目前仍有感染人数 81 万多病人，1 亿多人口和几千万家畜受到威胁；新疫区不断增加，并有向城市蔓延的趋势；钉螺的面积居高不下，而且这些地区的灭螺难度相当大；三峡大坝的建成和气候的变化，有可能使疫区扩大。

而目前控制血吸虫病的措施仍以灭螺和吡喹酮化疗为主，从而使我国血吸虫病防治工作面临着以下三个问题：⑴ 吡喹酮治愈的病人数月后出现再感染的情况严重，尤其是在高流行区；⑵ 越来越多的证据表明血吸虫抗药虫株的出现；⑶ 血吸虫病是人畜共患病，包括水牛、猪、羊在内的家畜和野生哺乳动物成为保虫宿主，它们是日本血吸虫从动物传播到人的重要传染源，而这些动物尚未纳入化疗的主要目标。因此，日本血吸虫病疫苗的研制作为一项血吸虫病防治的重要措施，已纳入 WHO 和我国主要疾病防治规划范畴。世界卫生组织曾推荐的六种曼氏血吸虫的候选抗原中，谷胱甘肽 S-转移酶（GST）、副肌球蛋白（paramyosin）和磷酸丙糖异构酶（TPI）已进行 I 期和 II 期试验。我国流行的日本血吸虫病疫苗候选抗原的研究基本还处在实验研究阶段，基因工程疫苗单个抗原的保护效果尚不理想，除了研制多价疫苗外，寻找新的能诱导较强保护性的疫苗候选分子仍是目前血吸虫病疫苗研究的工作重点之一，特别是我国日本血吸虫基因组测序计划基本完成之后，将加快这方面的研究进展。

日本血吸虫副肌球蛋白的天然、重组及核酸疫苗在实验动物上都有一定的免疫效果，但原核表达重组抗原保护力低于天然抗原和 DNA 疫苗，究其原因，可能是原核表达产物不能进行糖基化等修饰。由于天然副肌球蛋白分子只占血吸虫可溶性成虫抗原（SWAP）总蛋白量的 0.5%，纯化后得量较少，因此我们拟在哺乳动物细胞中表达副肌球蛋白，以接近天然形式的抗原来免疫动物以提高免疫保护力。

血吸虫的副肌球蛋白（Pmy）、肌球蛋白（myosin）、原肌球蛋白（tropomyosin）和肌动蛋白（actin）都被实验证明诱导一定的针对血吸虫攻击感染的保护力，这些分子都是血吸虫肌肉结构蛋白分子。我们通过对日本血吸虫大陆株 EST 的分析，选择嗜肌素样蛋白进行克隆和表达，探讨其是否具有免疫保护作用或免疫诊断价值。

1　日本血吸虫大陆株副肌球蛋白(Sjc97kDa)全基因体外真核表达

将编码 Sjc97DNA 的片段亚克隆至 pcDNA3 质粒,酶切位点为 *EcoRV* 和 *BamHI*,转化 JM109,经扩增培养,提取质粒并用限制性内切酶反应等方法鉴定后,选出重组克隆 pcDNA3/Pmy,对其测序,接着用脂质体转染法转染 NIH/3T3 细胞，用一定浓度的新霉素（G418）对转染的细胞进行筛选，持续筛选约两周，获得含 pcDNA3/Pmy 的细胞克隆。用常规方法收集阳性克隆细胞后，用 SDS-PAGE、Western blot 和 RT-PCR 等方法检测，未检测到所期望的目的条带。日本血吸虫大陆株副肌球蛋白基因转染 NIH/3T3 细胞获得成功，说明此技术路线可行，国内外未见相关报道，但表达未获得目的条带，是表达不成功还是检测手段问题、或是表达量的问题还有待进一步研究探讨。

2　日本血吸虫嗜肌素样蛋白(myophilin-like protein)的克隆、表达和纯化

从日本血吸虫 EST 库中选择血吸虫嗜肌素样蛋白基因克隆 SJM2AUC05 质粒作为模板，分析其读码框，用 Primer-premier 软件设计引物，上游引物引入 *BamHI* 酶切位点，下游引物引入 *KpnI* 酶切位点 。在 94℃预变性 5min、94℃变性 45sec、55℃退火 1min、72℃

延长 1min 的条件下进行 30 个循环的 PCR 方法扩增，末次于 72℃延长 7min，电泳检测产物为 0.6Kb 左右 ，与预计的一致。所得产物与 pGEM-T 载体连接，转化 JM109 进行 T-A 克隆，双酶切鉴定含有目的基因的阳性克隆送去测序，阳性克隆扩增后抽取质粒，此质粒 DNA 和 pQE30 表达载体 DNA 分别进行双酶切，酶切产物用 T_4 DNA 连接酶连接，构建 pQE30/ 嗜肌素样蛋白重组质粒，转化 JM109 进行质粒的大量扩增，抽取质粒并用限制性内切酶双酶切进行鉴定。重组质粒转化表达菌 M15 菌株，用 IPTG 诱导表达重组蛋白。用 SDS-PAGE 验证，表达的蛋白条带约 24.8kDa，与所估计的一致。Western blot 显示感染尾蚴六周的兔血清能识别该重组蛋白。用组氨酸亲和层析纯化该重组蛋白获得成功。日本血吸虫嗜肌素样蛋白编码基因的表达获得成功，并得到纯化蛋白，为大量制备该重组抗原和开展动物保护性试验创造了条件。

3 日本血吸虫嗜肌素样蛋白重组抗原诱导小鼠免疫保护性研究

将 80 只雄性 C_{57}BL/6J 小鼠随机分成四组，每组 20 只。两组为重组抗原加佐剂免疫组，分别以日本血吸虫重组嗜肌素样蛋白（15μg/鼠和 25μg/鼠两组）加福氏佐剂皮下多点注射免疫小鼠，免疫三次，间隔 2 周。佐剂对照组，用生理盐水代替重组蛋白，其它同上。感染对照组小鼠不免疫。末次免疫后 1 周，用日本血吸虫尾蚴攻击感染，每鼠 30±1 条，攻击感染 6 周后剖杀小鼠门静脉灌注收集虫体，计算减虫率。用该重组抗原包被，ELISA 结果显示，免疫后的血清滴度高达 1:12 800,显著高于佐剂对照组($P<0.05$)。但减虫效果不明显，15μg/鼠组减虫率为 13%，25μg/鼠组减虫率为 11.7%，嗜肌素样蛋白免疫组小鼠的减虫率与感染对照组小鼠无统计学上的显著性差异（$P>0.05$）。其免疫保护力有待进一步研究。此外，日本血吸虫重组嗜肌素样蛋白免疫小鼠后可诱导出较高的抗体滴度，说明其是一个抗原性很强的重组蛋白，因此，日本血吸虫重组嗜肌素样蛋白的免疫诊断价值值得进一步探讨。

恶性疟原虫 HRP-II 基因多态性分析与特异性单克隆抗体的制备

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疟疾仍是世界性的严重威胁人类生命和健康的公共卫生问题，而准确有效的诊断方法对于此病的有效控制具有重要意义。被广泛研究的恶性疟原虫富组蛋白 II（HRP-II）是最具诊断价值的分子之一。本课题首先通过设计一对引物以我国恶性疟病人和非洲恶性疟病人血样为材料扩增 HRP-II 基因片段，该片段编码主要由 AHH 和 AHHAAD 形成的连续串联氨基酸重复序列。用 GENEDOC 软件比较两者间的同源性，结果显示两片段两端的序列高度同源，从我国恶性疟病人血样扩增出的 HRP-II 基因片段核苷酸序列不但有多个长短不等序列的缺失和一 18 个核苷酸残基序列的插入，而且还有 10 个碱基发生了突变。比较推导的两氨基酸序列可以看出，除了有多个长短不等氨基酸序列的缺失和插入外其它氨基酸残基没有发生改变。在序列比较的基础上将从我国恶性疟病人血样扩增出的 HRP-II 基因片段进行克隆和表达，以此表达的重组蛋白免疫小鼠制备单克隆抗体，经筛选获得 4 株单克隆抗体。将这 4 株单克隆抗体对疟疾病人血样进行免疫印迹试验，结果显示这 4 株单克隆抗体对我国恶性疟病人血样均能识别一 60kDa 的单一条带，对非洲的恶性疟病人血

样均能识别一 74kDa 的单一条带，而对我国间日疟病人血样则无识别条带。初步结果显示制备的单克隆抗体具有特异性强的特征，这为以后研制诊断疟疾的产品打下基础。

§ 6. ABSTRACTS OF GRADUATE STUDENT DISSERTATIONS

RESEARCH REPROT

SEARCHING NEW TARGET ANTIGENS FOR IMMUNODIAGNOSIS OF CLONORCHIASIS AND EVALUATING THEIR DIAGNOSIS VALUE

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[Objective] To obtain new target antigen for immunodiagnosis of Clonorchiasis, ESTs (expressed sequence tags) were generated from a lambda ZAP Ⅱ cDNA library of adult *Clonorchis sinensis* and bioinformatics analysis was done. Selected recombinant proteins were expressed and preliminarily evaluated on their value of diagnosis; to develop an approach for detecting *C.s* ES antigen in patient fecal samples using specific monoclonal antibodies. **[Method]** 1. ESTs generation: The cDNA clones were randomly selected and sequenced from 5' end by T3 primer. Raw sequence data were edited to remove vector sequences, poly (A) tails and low quality sequence. Inserts containing more than 150 bp and less than 3% ambiguous bases were reserved as the effective ESTs. 2. Bioinformatics analysis: Cluster analysis, BLAST analysis, secreted/transmembrane protein prediction, gene express sequence analysis (statistics analysis) were carried out to search for the possible genes related to immunodiagnosis of Clonorchiasis. 3. Clone and express: The gene sequences were amplified from the cDNA clones and subcloned into pET28-a vector plasmid. The recombinant proteins were expressed under the induction of IPTG**.** 4. Preliminary evaluation: The expressed recombinant proteins were purified through the Ni-NTA agarose column (QIAGEN) and preliminarily evaluated for the potential of detecting antibodies in patients' sera by Western blotting and ELISA assay. 5. MAb production: *C. sinensis* adult worms were homogenized to make crude somatic antigen and ES antigen were obtained by collecting culture medium of adult worms, which were cultured *in vitro*. BALB/c mice were immunized with these two antigens to produce MAb. 6. Screening and Preliminary test of MAb: MAbs were screened by antisera inhibition test. Selected MAbs were examined for their isotypes and specificity, and were applied in Sandwich ELISA test for detection of *C. sinensis* ES antigen in human fecal samples. **[Result]** 1. Total of 5759 validated ESTs were acquired after edition. Among them, 1727 (29%) matched to known genes in nr database of GenBank (E<=e-20) and 312 ESTs (5%) were no match. 2800(66%) ESTs represent novel ESTs. 2. The ESTs were integrated into 1288 clusters (including 869 singletons). 3. Total of 23 possible secreted proteins and 196 possible transmembrane proteins were found after *in silico* prediction. The majorities of these proteins had low or no homologues to the sequences in the public databases, which maybe new secreted and transmembrane proteins. 4. 6 genes of *C. sinensis* were cloned and successfully expressed, and 5 of them were recognized by the Clonorchiasis patients' sera in Western blotting assay. 5. Recombinant protein Cs782 was purified. Result of ELISA assay

showed that the positive rate of its reaction with Clonorchiasis patients' sera and normal human sera were 90% and 5% respectively. 6. Total of 31 positive clones of *C. sinensis* MAbs were obtained and grouped into 5 categories according to the result of antiserum inhibition test. Five clones (Csxj35、Csxj39、Csxj43、Csxj63 and Csxj65) were selected; Their isotypes and specificity were examined. It seemed that they are specific to *C. sinensis* because they had no cross-reaction with *S. japonicum* crude somatic antigen, *S. japonicum* egg antigen and *Paragonimus westermani* crude somatic antigen. 7. An approach for detecting *C. sinensis* antigen in human fecal samples using selected MAbs was developed. Interestingly, it was found that MAb Csxj39 could detected 7 of 8 patients' samples with, and had no reaction with those of normal people; MAb Csxj63 could detect all patients' fecal samples and had only 1 reaction of 3 samples of normal people. The lowest detectable among of ES antigen that could be detected by Csxj63 was 5ng. **[Conclusion]** 1. 5759 valid *C. sinensis* ESTs were obtained. 2. A set of potential genes for immunodiagnosis were found. 3. Six genes were successfully expressed. Western blotting and ELISA assay demonstrated that purified Cs782 had the positive rates of 90% and 5% in its reactions with Clonorchiasis patients' sera and normal human sera respectively; it seemed to have potential for immunodiagnosis. 4. Thirty one positive clones of *C. sinensis* MAbs were obtained and 5 of them were selected and compared for specificity and sensitivity. Sandwich ELISA test was performed to detect *C.sinensis* antigen in human fecal samples. It seemed that MAb Csxj39 and Csxj63 (5ng ES antigen being testable) have good sensitivity; they may have potential for immunodiagnosis.

THE RESEARCH ON THE AGGRESSION OF THE FAMILY CLUSTERING ON *SCHISTOSOMIASIS JAPONICA*

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The researches on the aggression of schistosomiasis japonica focus on the issue of the distribution of the infection cases. The analysis of the family aggregation of the schistosomiasis japonica shows the family aggregation exists in the pilot area. The expected result of exposure for the household aggregation of infection might be similar environmental risk factors, familial genetic predisposition to infection, or acquisition of infection by close contact with an infected person. At present, the factors of a lot of multi-genetic diseases include the environment, gene, and personal behavior, et al. The research on families and multi-household pedigrees is necessary in order to explain the genetic factor and advance the powerful proof through genetic analysis.Schistosomiasis is also a multi-genetic disease. The correlative research about schistosomiasis mansoni entered the mutihousehold extended pedigrees from the household, but no reported about schistosomiasis japonica has been seen. An epidemiology survey was made in Tangmei village, Jiangxi province, PR China, a endemic area for schistosomiasis, to explore the rules of the egg distribution in the household and the multihousehold pedigrees through

quantitative analyses to determine the relationship between the infection and the familial genetic predisposition to infection, the shared risk factors.

Part Ⅰ Baseline measurement

Aim:

The Poyang lake, located in Jiangxi Province, is a major focus of schistosomiasis transmission in China. The baseline measurement at the end of year 2002 and 2003 was performed to observe the infection of the study area dynamically in order to make clear of the epidemical status of schistosomiasis japonica of the study area and to do further genetic research of schistosomiasis japonica.

Methods:

We selected the Tangmei administration village, located in Duchang town, Jiujiang city, Jiangxi Province, as the study area.1064 individuals were examined parasitological by two stool samples with six slides , 1015 individuals were accepted the questionnaire by the end of 2002, 49 individuals missed the survey. 418 individuals were followed up in 2003.The retrospective water contact was surveyed in December, 2003.

Result:

1．The population structure of 2002 and 2003 on age, sex, occupation and education is basically in the same.

2． The infection rate of 2002 and 2003 is 20.8 %(the modulate infection rate is 21.16%, 2003 population as the standard population) and 25.6% respectively. The geometric epg of population in 2002 and 2003 is 4.03+11.37 and 4.78+12.45 respectively; The geometric epg of patient of 2002 and 2003 is 94.95+10.15 and 83.09+10.32 respectively.

3．The major water contact modes are fishing and cloth washing, the former is occupational mode, the latter is daily activity. The frequency of water contact in September is lower obviously than that in July and August. The students have the highest frequency of water contact, while farmers rank second. The intensity of water contact of individuals in the study area increased with age. The intensity of water contact among individuals reached the pinnacle in the 40-50 years age group and decreased rapidly i over 50 year-age group. There is no statistically significant difference of square root of water contact index between the infected group and noninfected group by one-way ANOVA analysis.

Part Ⅱ The relationship between
Schistosoma japonica infection and household fators

Aim:

This part explores the distribution of infected cases with *schistosoma japonica* in the household and the effect of household in the transmission of Schistosomiasis japonica in order to find some clues for the research of genetic factors of *Schistosoma japonica* infection through the analysis of distribution of infected cases in the household and then relatives.

Method:

Family surveys: the researcher survey the family construction of household.

Result:

1． The family aggregation of schistosomiasis infection cases in Tangmei village is not by chance.

2．The relatives of infected persons in the study area are easier to be infected than noninfected persons. The infection chance rises along with the relationship closer.

The Schistosomiasis japonica infection was affected by many factors. We will further research the reasons of the family aggregation among schistosomiasis cases

Part Ⅲ The relationship between

***Schistosoma japonica* infection and muti-household factors**

Aim:

This part explores the effect of genetic factors in the process of schistosomiasis on the basis of the relationship between the susceptible population and genetic factors though muti-household pedigree survey to analyze the relationship between the infection and water contact and the egg count distribution in the muti-household pedigree members.

Methods:

Pedigree survey: pedigree survey traced the paternal kin in 5 generation

Result:

1． The level of the water exposure is different among different multihousehold pedigrees. It is significant obviously in statistics of the water exposure among the members in the mutihousehold pedigrees.

2．The egg count distribution of infection cases is not even among the members in the mutihousehold pedigrees; It is significant obviously in statistics of the egg count among the members in the mutihousehold pedigrees. Two factors, the pedigree and water contact, are both significant obviously in statistics of the variation of egg count. The variation of egg count lead by pedigree is larger than that by water contact.

Conclusion

The further analysis was made about the *Schistosoma japonica* infection at the household lay and mutihousehold pedigree lay separately. Water contact is an important factor in the *Schistosoma japonica* infection, but the *Schistosoma japonica* infection by the genes controlling or regulating maybe exist through analysis of the *Schistosoma japonica* infection among the different mutihousehold pedigrees.

STUDIES ON THE MUSCLE-RELATED MOLECULES OF VACCINE AGAINST *SCHISTOSOMA JAPONICUM*

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Schistosomiasis, a zoonotic disease, is harmful severely for human health. According to the

statistics by WHO in the year 2002, it was endemic in 74 tropical developing countries. It was estimated that 600 million people were at risk of becoming infected and 200 million people were already infected. In our country, most of endemic areas had been eliminated and controlled after fifty years anti-schistosomiasis campaign. Endemic provinces, counties and small towns declined 42%, 40% and 53% respectively after control. But the situation of schistosomiasis control is still severe because the disease in some areas comes to be recurrence and thousands of new cases of acute schistosomiasis have been reported in recent years from endemic areas. It was estimated that nearly 100 million people and more than ten million domestic animals were at risk of becoming infected and 810 thousand people were already infected; New endemic areas increased continuously and might be spreaded into urban areas; The areas infestated by oncomelania snails still enlarged and it was very difficult to control the snails through molluscicide in these areas. Endemic areas of schistosomiasis japonica might be expanded after construction of Three Gorges Project and changes of climates.

The measures rely predominantly on mass chemotherapy with the drug praziquantel and snail control through molluscicide. The work of prevention in our country should be faced three major problems. First and foremost, high rates of reinfection with schistosomes occur within a few months following treatment. Second, there are potential and proven concerns about emerging praziquantel drug resistance. Third, the reservoir of domestic animal hosts and wild mammals, such as buffaloes, pigs and sheep, represent a significant sources for zoonotic transmission of *S.japonicum* to humans; these animals are generally not targeted for mass chemotherapy. It seems clear that the currently most feasible long-term solution to the problem of schistosomiasis is a protective vaccine, Among six of candidates selected by WHO, GST, paramyosin and TPI have successfully completed phase I trials and is in phase II trials. The *schistosoma japoncum* homologous of some of *Schistosoma mansoni* antigens, first defined as being protective in experimental vaccinations have been shown to be partially effective in experimental *Schistosoma japonicum* system. While support for the genomic sequencing initiative is enormous value and will be sure to provide new insights of great importance. However, it is as well to remind ourselves that all vaccines currently being tested have shown only limited efficacy in animal trials. There remains a real need for continued support of vaccine-related research in schistosomiasis. Paramyosin of *Schistosoma japonicum* has a protective efficacy in spite of sources from native, recombinant or DNA candidated antigens. Whereas immune effect of native antigen and DNA vaccine is better than recombinant antigen. It seems that the expression products comes from protocystes without glycosylation. Also the proportion of native paramyosin in SWAP is only 0.5 percent of total protein content. According to these reasons, we expected that paramyosin could be expressed in mammalian cells in vitro and hoped that its immunologcal efficacy in animals vaccinated could be also induced and increased to the level as the native candidates.

Native and recombinant muscle-related antigens such as paramyosin, myosin, tropomyosin

and actin of *Schistosoma japonicum* have been shown to be partially induced protective immunity against the challenge infection in experimental models. Myophilin-like protein is the one obtained from EST of schistosoma japonicum cDNA library as a new candidate antigen of schistosome vaccine. The cloning and expression of the gene encoding *Schistosoma japonicum* myophilin-like protein was performed and its protective efficacy, perhaps potential immunodiagnostic value was also evaluated. The main results and conclusions can be summarized as follows:

1 Eukaryotic Expression of Full Length cDNA Encoding Paramyosin of *Schistosoma japonicum*

The gene encoding paramyosin was subcloned into eukaryotic expression vector pcDNA3 digested with *Eco*RV and *Bam*HI restriction endonuclease. The recombinant plasmid pcDNA3/paramyosin, first propagated in *Esherichia coli* JM109. Then the plasmid after being treated by different steps such as extraction, purification and digestion with *Eco*RV and *Bam*HI. were confirmed to contain full length of Sjc97 cDNA by agarose gel analysis and DNA sequence analysis. NIH/3T3 cells were maintained in a DMEM medium containing 10% fetal bovine serum and performed daily culture. The recombinant plasmid pcDNA3/paramyosin was transfected into NIH/3T3 cells by using Tansfectam Reagent and then selected clones containing pcDNA3/paramyosin by G418 at concentration of 450μg/ml. After two weeks selection, the cells were collected by general methods. The recombinant protein in positive clones was not determined by SDS-PAGE, Western blot and RT-PCR. This is the first time to have fully successful cloning eukaryotic expression of full length cDNA encoding paramyosin of *Schistosoma japonicum*. Taken together, NIH/3T3 cells containing pcDNA3/paramyosin were selected successfully and we searched for the papers about it in domestic and foreign, but no published papers were found. It will be worth to have further experiments with NIH/3T3 cells containing pcDNA3/paramyosin.

2 Study on the Cloning, Expression and Purification of the Gene Encoding Myophilin-like Protein of *Schistosoma japonicum*

We selected SJM2AUC05 plasmid from of *S.japonicum* EST library as template of PCR and analyzed its Open Reading Frame. A couple primers were designed using the Primer-premier software, with the *Bam*HI restriction endonuclease site introduced in forward primer and *Kpn*I at the ending code in reverse primer. PCR amplification was carried out using the following profile: one cycle of 5 min at 94 C; 30 cycles of 45sec at 94 C, 1 min at 55 C, 1 min at 72 C; one cycle of a final extension for 7 min at 72 C. DNA fragments were detected by staining with ethidium bromide and located about 600bp compared with 1kb DNA ladder marker. The gene was ligated with the vector pGEM-T with T_4 ligase. The plasmid pGEM-T/myophilin-like protein digested with *Bam*HI and *Kpn*I were confirmed to contain the gene by agarose gel analysis. Both the plasmid pGEM-T/myophilin-like protein and the expression vector pQE30 were digested by restriction endonucleases *Bam*HI and *Kpn*I. The target DNA fragments were

purified and subcloned into the vector pQE30, then transformed into *E.coli* JM109 for the amplification. pQE30/myophilin-like protein was detected by *Bam*HI and *Kpn*I's digestion and analyzed by agarose gel. pQE30/myophilin-like protein was transformed into *E.coli* M15 for its expression. The recombinant myophilin-like protein was induced by IPTG.. The expressing products were assayed by SDS-PAGE and this protein of about 24.8kDa was recognized by the rabbits infected sera with cercariae of *S.japonicum* after six weeks. It was isolated and purified by affinity chromatography on a Ni-NTA Spin Column. The successful expressions of the gene encoding myohpilin-like protein of *S.japonicun* have been made and will provide the approaches to purification the recombinant protein in large scale, thus make the possibility in different kinds of experimental and domestic animal vaccinated with the recombinant antigen to measure the protective immunity.

3 Protective Immunity in Mice Induced by Recombinant Myophilin-like Protein in *Schistosoma Japonicum*

80 male C57BL/6 mice were divided into four groups at random. Two groups of mice(immunized mice group) were immunized subcutaneously by the recombinant myophilin-like protein emulsified in Freund's adjuvant, with the doses of 15μg per mouse or 25μg per mouse individual. Others would be served as control groups including adjuvant control and infectious control. Immunized mice twice at interval of 2wk and boosting 1wk later, each C_{57}BL/6J mouse was challenged with 30±1 *Schistosoma japonicum* cercariae. Six weeks later, mice were sacrificed and worm reduction rate was calculated. Results showed that mice in both groups *($P<0.05$)* developed high titers(1:12800) of anti-recombinant myophilin-like protein antibody, which were much higher than the control groups *($P<0.05$)*. There were no significant differences in statistics between immunized mice and control mice in worm reduction rates *($P>0.05$)*. The recombinant myophilin-like protein in this experiment failed to induce significant protection against challenge infection in mice. Induction of high titers(1:12800) of anti-recombinant myophilin-like protein antibody show that myophilin-like protein is a potential schistosome antigen and may be used for immunodiagnosis purpose of *Schistosomiasis japonica*.

ANALYSIS OF THE *PLASMODIUM FALCIPARUM* HRP-II GENE POLYMORPHISM AND PREPARATION OF MONOCLONAL ANTIBODY SPECIFIC TO HRP-II

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Malaria which seriously threat people's life and health remains one of the major public concern worldwidely. The use of highly accurate and effective diagnostic methods is one of the most important keys in controlling this disease. The histidine-rich protein II（HRP- II）,one of the most important antigens for diagnosis of malaria, has been studied widely. HRP- II gene

fragment of *Plasmodium falciparum* (*P. f*),which encodes amino acid sequence composed mainly of multiple contiguous tri- and hexapeptide repeats, predominantly AHH and AHHAAD, were amplified by PCR. from blood sample of *P.f* patients infected in China and Africa, respectively. GENEDOC software was used for comparing and analyzing their homology in the nucleotide sequence and the deduced amino acid sequence. The results revealed considerable difference between them, mainly in length of the nucleotide sequence and deduced amino acid sequence. Not only different length of sequences are deleted and a eighteen-oligonucletide is inserted in the nucleotide sequence amplified from blood of patients infected in China, but also ten bases are different between two amplified nucleotide sequences. There was no change in the two deduced amino acid sequences except a few deletions and/or insertions of different length. After the HRP-II gene fragment amplified from Chinese *P.f* patient blood being cloned into expression vector pGEX-3X, the recombinant HRP-II fragment was expressed and purified. The purified recombinant HRP-II fragment was used to immunize BALB/c mice for producing hybridoma. Four monoclonal antibodies (McAbs) specific to HRP-II were obtained using the protocol of hybridoma technique used in our laboratory. Western-blotting assay revealed the McAbs can specifically recognized *P.f* patient's blood sample not only from China but also from Africa, however, the molecular weight of antigen recognized by the four McAbs was different between two blood samples, 60kDa in China patient's sample and 74 kDa in Africa sample. *Plasmodium vivax* patient's blood sample cannot be recognized by the McAbs.

§7. 出版著作和发表论文题录

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§8. 2004 年大事记

- **1 月 12 日** 所学术委员会完成换届工作，汤林华研究员为新一届学术委员会主任。

- **1 月 15 日** 召开 2004 年工作会议，汤林华所长作了关于《2003 年行政业务工作总结》和《2004 年工作要点》的报告，职代表对所长的报告进行了审议。

- **2 月 9 日** 由于瑞金医院开挖大楼基坑造成我所相邻的 3 号楼墙体及地面开裂。我所要求瑞金医院采取相关措施、增加监测点、每日提供监察数据。

- **2 月 11 日** 召开 2004 年党委工作会议，党委副书记汤林华、纪委副书记李伟民同志分别作了 2003 年党委、纪委工作总结，部署了 2004 年工作。

- **2 月 13 日** 卫生部规财司副司长赵自林、基建装备处处长孟建国等一行 3 人来我所考察“急性虫媒传染病实验室”筹备情况。

- **2 月 16 日** 举行“领导班子成员述职报告会”，中国疾病控制中心党委书记朱志南、党办副主任田占平、人力资源处副处长徐缓及上海市卫生局组织处副处长吕欣欣出席会议。

- **2 月 23 日** 我所“隐孢子虫病快速诊断检测方法及虫株鉴别的研究”、“新发寄生虫病媒介生物学监测与预警系统的研究”分别获得 60 万元、120 万元的资助。

- **2 月 24 日** 完成“急性虫媒传染病实验室”设计要求的汇总工作。

- **3 月 2 日** 卫生部规财司国资处调研员刘莉、中心财务处处长张雁、后勤管理处处长杜光、副处长李新焕等来所，就离休干部住房解困、4 号楼危房改造及货币化分房事宜进行调研。

- **3 月 8 日** 由于瑞金医院开挖基坑，造成我所相邻的 2、4 号楼地面大幅度沉降、开裂，我所要求瑞金医院采取积极措施，防止事态进一步发展和意外事故发生，加快 2 号楼房屋完损性检测进程。

- **3 月 16 日** 接待法国巴斯德研究所所长 Kourilsky 教授一行 3 人来所访问。

- **3 月 19 日** 纪委书记周晓农代表所纪委与财务处、后勤服务处和基建办公室等管钱、

管物的部门负责人签定了《寄生虫病所廉政勤政责任书》。

- **3 月 24～26 日** 中国疾控中心副主任宫新生就本所危房改造等问题进行调研。
- **4 月 14～15 日** 举办本所“公共卫生政策与条例”培训班。
- **4 月 19～22 日** “2003 年全球基金疟疾、结核病项目财务年会” 在上海召开，对来自全国各省项目承担单位的财会人员进行了培训。
- **4 月 21～23 日** 汤林华研究员赴柬埔寨参加“全球艾滋病、结核和疟疾基金会地区会议”。
- **4 月 25～29 日** 汤林华研究员和周水森副研究员赴印度尼西亚参加“印度尼西亚疟疾综合控制措施研讨会”。
- **4 月 26～29 日** 组织各部门进行了安全检查，重点是实验室的安全管理，并完成了《关于加强实验室安全管理工作自查情况的报告》。
- **5 月 8 日** 任命曹建平同志为所长助理，王灵同志为党办主任。
- **5 月 17 日** 召开 4 号楼危房改造工程发标会。
- **5 月 20 日** 郑江和周晓农研究员出席国务院召开的“全国血防工作会议”。
- **5 月 29 日** 国家一类新药“三苯双脒肠溶片”获得新药证书。
- **5 月份** 周晓农、郑江、郭家钢研究员分别参加了卫生部、农业部、水利部副部长带队的国务院血防春查活动。
- **6 月 2 日** 中国疾控中心李立明主任、朱志南书记及相关部门负责人共 16 人来所检查实验室安全工作，汤林华所长就本所实验室安全整改及重大寄生虫病的防治工作做了汇报，中心领导对本所的整改工作表示满意，并作了重要指示。
- **6 月 2～3 日** 举办了“实验室安全培训班”。
- **6 月 8～10 日** “亚洲疟疾培训网络理事会暨理事会与合作组织年会”在上海召开，中国疾控中心副主任杨晓光、卫生部疾控司调研员徐东方以及来自 8 个国家的 22 名外宾出席了会议。

- **6 月 9～18 日** WHO 专家组来华对我国消除淋巴丝虫病实施情况进行预评估和实地考察。

- **6 月 16 日** 完成急性虫媒传染病实验室改造工程施工图设计工作。

- **6 月 18～20 日** 汤林华所长、孙德建、郑江、官亚宜研究员赴银川参加“全国地方病寄生虫病标准委员会工作会议”。

- **6 月 21 日** 经本所第四届团总支第一次委员会通过，许静同志为总支书记。

- **6 月 23 日** 4 号楼危房大修工程正式动工

- **6 月 28 日** 完成本所离休干部住房补贴工作，田野等 6 名同志分别领到住房补贴。

- **6 月 29～30 日** 汤林华所长、余森海、许隆祺研究员及科技处处长官亚宜赴广州参加由卫生部主办的“全国人体重要寄生虫病现状调查工作总结会”。

- **6 月 30 日** 周晓农、许学年副所长赴广州主持召开“三苯双脒推广座谈会”，并参加了“抗肠道线虫一类创新药三苯双脒学术研讨会”。

- **7 月 2 日** 汤林华所长传达了吴仪副总理和高强常务副部长在卫生部召开的中国疾控中心干部职工大会上的重要讲话精神，并要求全所职工统一认识，结合工作实际认真学习和讨论。

- **7 月 2～5 日** 周晓农研究员赴日本参加“亚太地区国际人兽共患蠕虫病会议组委会议”。

- **7 月 9 日** 受中国驻法使馆科技处的委托，我所接待 DNDi(寻找被忽略疾病药物组织)协会主席 Yves Champey 先生和法国科研中心人员 Mely 先生。

- **7 月 19 日** 经第十届一次工会委员会会议投票选举，王灵为工会主席，王立明为副主席。

- **7 月中旬** 本所专业人员分 2 组分别对四川、云南、湖南及湖北 4 省开展预防急性血吸虫病工作进行督导。

- **7 月 21～22 日** 本所配合卫生部在湖北省荆门市主持举办了“急性血吸虫病疫情报告和现场流行病学调查研讨班”。

- **7 月 30 日** 受上海市政府外事办公室的委托，巴西总统府政治协调与机关事务部长 Rebelo 等一行 4 人来所访问，双方就共同关心的问题和今后中巴科研人员合作进行了讨论。

- **8 月 5～9 日** 我所参加了由卫生部组织的明查暗访活动，10 余名血防专家分赴安徽、湖南、江西、四川 4 省现场调查血吸虫病防治工作的进展情况。卫生部领导予以高度评价，并指出明查暗访将作为一个制度长期坚持执行。

- **8 月 16 日** 汤林华所长、周晓农副所长等赴广州参加“全国第二届医学寄生虫学与热带医学研究新进展研讨会”。

- **8 月 18～22 日** 由我所主办的“全国血吸虫病流行病学调查血清学、病原学检测培训班”在深圳举行，来自全国 12 个血吸虫病流行省的 80 余人参加了本次培训班。周晓农副所长对全国流调后续工作进度进行了具体安排并提出要求。

- **8 月 21～27 日** 汤林华研究员、陈家旭副研究员等赴菲律宾参加“临床实验室显微镜维护、保管与维修培训班”开班仪式并访问了“亚网”办公室和西太区总部。

- **8 月 23～26 日** 周晓农副所长应邀赴北京参加了“十九届国际动物学大会”，并主持了 2 次关于“国际重要人兽共患寄生虫病”讨论会。

- **8 月 24 日** 召开消防设施改造工程招标会。

- **9 月 1～29 日** 举办了“专业寄生虫学与专业英语培训班”，2003 级硕士生和 2004 级博士生及新职工参加了培训。

- **9 月 3 日** 上海市动物管理委员会专家对我所 SPF 级动物房改造进行了认证。

- **9 月 6～10 日** 周晓农研究员赴意大利参加“建立全球囊虫病防治项目”会议。

- **9 月 8 日** 2 号楼改造工程招标专家评标会在卢湾区招标办公室举行，经过专家认真评估和打分，确定由上海美达建筑公司中标。

- **9 月 9 日** 中国疾控中心主任王宇来所检查指导工作，并参观了新建的人体重要寄生虫媒介与标本展示馆，汤林华等所领导汇报了有关工作。

- **9 月 10 日** 在 WHO 西太区委员会第 55 届会议于上海召开之际，作为 WHO 疟疾、血吸虫病、丝虫病合作中心主任，汤林华所长接受了上海电视台记者的采访，采访的

内容于 9 月 17 日的新闻频道和东方卫视播出。

- **9 月 15 日** 我所周晓农、郑江、郭家钢、吴晓华同志分别担任卫生部血吸虫病专家咨询委员会主任委员、顾问、委员及秘书之职。

- **9 月 16 日** 组织全体职工到上海职工医学院体检中心进行体检。

- **9 月 17 日** 我所“灭螺药溴乙酰胺的合成工艺改进及缓释新剂型研究”、“新型广谱驱虫药药理药效学研究”获上海市科委重点科技攻关项目资助。

- **9 月 17 日** 我所委托上海欣顺建设工程监理有限公司对急性虫媒传染病实验室改造工程进行监理，并签订建设工程委托监理合同。

- **9 月 17～19 日** 全球基金财务经理 Hurley 博士来所访问。

- **9 月 20 日** 召开本所疾病控制工作会议，汤林华所长对我所上半年疾病控制工作做了回顾和总结，对下半年工作进行了布置和要求。

- **9 月 27 日** 我所“抗血吸虫药物靶点的发掘”获得国家自然科学基金资助（青年基金）。

- **9 月 28 日** 汤林华所长、周晓农副所长参加中心学位委员会会议，本所 2 位硕士生导师和 4 位硕士生学位论文均通过评审。

- **9 月 30 日** 成立以汤林华所长为主任的所生物安全委员会和以许学年副所长为组长的安全生产监管领导小组，并分别召开会议，布置近期工作。

- **10 月 11～12 日** 我所分别举办了 2 期实验室生物安全专项培训班，共有 80 余名实验室管理与工作人员参加了培训。

- **10 月 15～20 日** 组织所内外有关专家开展晚期血吸虫病病人救治政策的调研活动，基本查明了当前晚期血吸虫病病人救治状况。

- **10 月 17 日** 召开寄生虫病标准清理工作会议，完成有关标准的评价工作。

- **10 月 18 日** 十五攻关课题“生态环境变化对血吸虫病流行的影响及干预措施的研究”和“嗜人按蚊地区疟疾流行潜势及控制爆发流行的研究”继续得到后 2 年的资助。

- **10 月 25 日** 召开党政领导班子民主生活会，中国疾控中心党委副书记许桂华、党办

副主任田占平、上海市卫生局纪委副书记凤伟忠和组织处副处长吕欣欣参加了会议。

- **10 月 25 日** 召开急性虫媒传染病实验室改造项目中消防改造工程的开标会，设计单位专家、施工、监理单位代表、所纪检人员和基建办公室主要成员对 4 家应标单位的投标文件进行了审核。

- **10 月 26 日** 召开本所 SPF 级动物模型室工程开标会，上海市动物管理委员会专家、急性虫媒传染病实验室改造设计单位专家、所纪检人员和基建办公室主要成员对 3 家应标单位的投标文件进行了审核。

- **10 月 27～29 日** 举办了第二期中层干部培训班。

- **10 月 28 日** 举行 “急性虫媒传染病实验室改造工程”开工仪式及“人体寄生虫和媒介标本馆”开馆仪式。卫生部规划财务司副司长赵自林、基建处处长祁贵新、中国疾控中心科技处处长赵慧芬、上海市卫生局科研处副处长张勘及部分兄弟单位的领导参加了仪式。

- **11 月 3～9 日** 汤林华研究员等 4 人赴韩国参加“第四届项目实施和评估研讨会”。

- **11 月 9 日** 周晓农副所长等 2 人赴北京参加由科技部主办的“自然资源 E-平台建设研讨会”。

- **11 月 10 日** 经所 SPF 级动物房工程招投标小组和基建办公室成员认真讨论，确定苏州金燕净化设备有限公司为本次招标的中标方。

- **11 月 14 日** 周晓农副所长等 3 人赴北京参加“卫生部 2004 年中央支持地方卫生事业专项资金血防项目管理办法与技术方案研讨会”。

- **11 月 15～18 日** 汤林华研究员赴越南参加“跨地区间湄公河流域遏制疟疾项目抗疟药研讨班”。

- **11 月 25 日** 王灵同志当选为卢湾区第十三届人大代表。

- **11 月 25 日** 召开所学术委员会会议，评审本所中青年科学基金项目，李小红等 3 位青年科技人员获得资助。

- **11 月 29 日** 成功举办“东亚区域间疟疾控制会议”，来自中国、朝鲜和韩国等三国的 17 位代表及世界卫生组织（WHO）、WHO/WPRO、WHO/SEARO（世界卫生组织东

南亚区办事处）的官员、临时顾问等 18 人出席大会。

- **12 月 4 日** 根据上海市房屋建筑设计院有限公司的复函，为确保安全及施工质量，本所立即通知施工单位，暂停“急性虫媒传染病实验室”改造项目的施工作业。

- **12 月 4～5 日** “全国疟疾、血吸虫病监测实施方案研讨会”和“全国第三次血吸虫病流行病学抽样调查专家组研讨会”在上海市召开，卫生部疾控司血防处处长王立英以及全国流调专家组成员出席了会议。

- **12 月 7～10 日** 汤林华研究员和周晓农研究员赴日本参加“美日医学合作第四十届年会”。

- **12 月 15 日** 党委会同意本届妇委会由张皓冰任主任。

- **12 月 16 日** 举行 4 号楼启用仪式，汤林华等所领导为 4 号楼的启用剪彩。同日，食堂恢复供应工作午餐。

- **12 月 22～24 日** 组织召开了《第三次全国血吸虫病流调资料分析方案》修订会。会议对《第三次全国血吸虫病流调资料分析方案》进行了全面的讨论和修订，并完成讨论稿。

- **12 月 22～24 日** 受卫生部和中心的委托，我所在无锡承办了“基层血防人员手册和乡村干部培训大纲编稿会”，与会专家讨论完成了框架、目录的编制等工作。

- **12 月 24 日** 召开“寄生虫病所特殊补贴发放工作动员会”，中心党委副书记许桂华为全所职工作了动员，汤林华所长就如何贯彻中心文件作了具体部署。

- **12 月 24～31 日** 受中国疾控中心委托，组织我所有关专家分赴湖南、湖北、江西、安徽、江苏、四川及云南省开展全国流调病原学调查质量检查工作。

- **12 月 27 日** 举行中层干部述职考核会。

- **12 月 28 日** 周晓农副所长等 2 人赴北京参加卫生部疾控司召开的“血吸虫病防治工作规划研讨会”。

- **12 月 31 日** 召开所安全生产领导小组工作会议，汤林华所长要求检查到位，排除隐患，不留死角，确保节日期间本所的安全，会后分 3 组进行了安全检查和整改。

§ 8. IMPORTANT EVENTS IN 2004

- **12th January** The Academic Board of the Institute was reelected, and Prof. Tang Lin-hua was appointed as Chairman for the new term of the Academic Board.

- **15th January** The " Annual Work Meeting 2005" was held, and on the meeting Director Tang Lin-hua delivered reports entitled "Summary of professional and administrative works of the Institute in the Year 2003" and "Main working points in the year 2004". The staff delegates reviewed the director's working report.

- **11th February** The working meeting of the Committee of the Communist Party of the Institute was held, and the Deputy Secretary of Committee of Communist Party, Prof. Tang and Mr. Li Weimin, Deputy Secretary of the Discipline Inspection Commission, gave a talk of work report, respectively, and deployed the works in 2004.

- **13th February** Three persons including Zhao Zilin, Deputy Director of Department of Programme and Finance of MOH, Meng Jianguo, Chief of Department of Capital Construction, etc. reviewed the status of preparation for rebuilding emergent arbo-disease laboratory.

- **16th February** The meeting of reporting their works by the staff members to the Institute leadership was held, and the leaders from China CDC and Shanghai Bureau of Health, i.e., Zhu Zhinan, the Secretary of the Committee of the Communist Party, Tian Zhanping, Deputy Director of Department of Communist Party, China CDC, and Lu Xinxin, Deputy Chief of Department of Organization, Shanghai Burerau of Health.

- **23rd February** Two projects, i.e., "Studies on diagnostic methods of cryptosporidiosis and identification of cryptosporidium strain" and "Surveillance of vector biology and predicting system of emerging parasitosis" were funded CHY 600,000 and CHY 1,200,000 respectively.

- **2nd March** Liu Li，researcher of Department of Pragramme and Finance, Zhang Yan，Section Chief of Department of Finance of China CDC, Chief Du Guang and Vice Chief Li Xinhuan of Department of Logistics and Service of China CDC came to our Institute, to find out the houses for the cadres retired, to see the renovation of No 3 building and the matter of monetization for housing distribution.

- **16th March** Director, Professor Kourilsky and other two staff of Institute Pasteur, France visited our Institute, and Director Tang Linhua met with the guests.
- **19th March** The "Responsibility of Honest and Clean Administration and Hardworking Administration" was officially signed between the Secretary of Discipline Inspection Committee of the Party Committee, and principals of Department of Financial Affairs, Department of Logistics and Service and Capital Construction Office of the Institute.

- **14th – 15th April** The training course on the policy and statute of public health was held in our Institute.

- **19th -22nd April** "Annual meeting of finance for global funds to fight against AIDS, tuberculosis and malaria" was held in Shanghai, and the financial managers from whole country were trained.

- **21st – 23rd April** Director Tang Linhua and Associate Prof. Zhou Suiseng attended " The global funds to fight against AIDS, tuberculosis & malaria Asia regional meeting" in Siem Reap, Cambodia.

- **25th – 29th April** Director Tang Linhua and Associate Prof. Zhou Suiseng attended the workshop on the "Cooperation for Comprehensive Malaria Control" in Jakarta, Indonesia.

- **26th – 29th April** The various branches of the institute were organized to examine the security works, especially management of laboratory security, and wrote the "Report on strengthening self examination of laboratory security management".

- **8th May** Associate Prof. Cao Jianping was appointed as Director Assistant, and Ms. Wang Ling was appointed as chief of the Office of Communist Party.

- **20th May** Deputy Director Zhou Xiaonong and Prof. Zheng Jiang attended the "Working meeting on schistosomiasis control and prevention held by the State Council.

- **29th May** A new drug certificate was provided to the enteric soluble tablet of tribendimidine,, a novel drug, made by the Institute.

- **In May** Prof. Zhou Xiaonong, Zheng Jiang and Guo Jiagang attended the activities of spring supervision on schistosomiasis control and prevention lead by Vice Minister of Ministry of Health, Ministry of Agriculture and Ministry of Water Conservancy, respectively.

- **2nd June** A total of 16 members from China CDC, Director Li Liming, Party Secretary Zhu Zhinan and other principals checked up the work of laboratory security. Director Tang Linhua gave the leaders two reports about the work of laboratory security and important parasitic diseases control and prevention. The leaders from China CDC approved the works and gave a talk.

- **2nd – 3rd June** The training course of laboratory security was held in our Institute.

- **8th -10th June** The "Annual Meeting of Executive Board and EB-Partner on Asia Collaborative Training Network for Malaria" was successfully held in Shanghai, and Deputy Director Yang Xiaoguan from China CDC, Mr. Xu Dongfang from Department of Disease Control of MOH and 22 foreign guests from 8 countries attended the meeting.

- **9th – 18th June** Five experts from WHO pre-evaluated and carried out on-the-spot investigations on the situation of implementation for lymphatic filariasis elimination in China.

- **18th – 20th June** Director Tang Linhua, Prof. Sun Dejian, Zheng Jiang and Guan Yayi attended the "Working meeting of commission for the Chinese criteria of endemic and parasitic diseases" in Yinchuan City.

- **21st June** Miss Xu Jing was appointed as the Branch Secretary of the Communist Youth League of IPD, China CDC by the first committee meeting of the 4th Committee of the Branch of Communist Youth League of the Institute.

- **23rd June** Reconstruction of the building No. 3 was started formally.

- **29th – 30th June** Director Tang Linhua, Prof. Yu Senhai, Xu Longqi and Guan Yayi attended the "Report meeting of investigation for important human parasitic diseases in China" held by MOH in Guangzhou.

- **30th June** Deputy Director Zhou Xiaonong and Xu Xuenian held a collogue of extending Tribendimidine, and participated in the "Symposium on Tribendimidine, a novel drug for anti-intestinal nematode".

- **2nd July** Director Tang Linhua communicated the key talks of Vice Premier Wu Yi of the State Council and Deputy Minister Gao Qiang of MOH in the staff meeting of Chinese Center for Disease Control and Prevention.

- **2nd – 5th July** Deputy Director Zhou Xiaonong attended the "Committee Meeting on Cestode Zoonoses in Asia and the Pacific Region" in Japan.

- **9th July** Vice Chairman, Mr. Yves Champey from Association of Drugs for Neglected Diseases Initiative and Mr. Bernard Mely from France Center of Science and Technology visited our Institute.

- **19th July** The first meeting of the 10th committee of labour union of the Institute voted Ms. Wang Ling as chairman and Mr. Wang Liming as vice chairman.

- **Mid July** The professionals from our Institute divided into two groups supervised the works of acute schistosomiasis prevention and control in Sichuan and Yunnan, Hunan and Hubei provinces, respectively.

- **21st – 22nd July** The "workshop for report of endemic situation of acute schistosomiasis and investigation of epidemiology in the field" was held by MOH and assisted by the Institute in Jingmen, Hubei province.

- **30th July** Entrusted by Protocol Department, Shanghai Municipal Foreign Affairs Office, Director Tang Linhua met Primer Mr. Jose Aldo Rebelo Figueiredo and Mrs Rebelo, etc. from Brazil, and discussed the matters of science and technological cooperation with the guests.

- **5th – 9th August** Joining the activity of observing publicly and investigating privately, more than ten experts from our Institute went to Anhui, Hunan, Jiangxi, Sichuan provinces to review the progress of schistosomiasis control and prevention in the field. The leaders of MOH evaluated the activity highly and this kind of regular activity can be implemented for a long period of time.

- **16th August** Director Tang Linhua and Deputy Director Zhou Xiaonong attended the "2nd National Symposium on Progress for Medical Parasitology and Tropical Medicine" in Guangzhou.

- **18th – 22nd August** The Institute held a "Training Course of Immunological and Parasitologica Examinations for Epidemiological Survey of Schistosomiasis" in Shenzhen City, 80 trainee from 12 provinces participated the training course. Deputy Director Zhou Xiaonong arranged further work for epidemiological survey on schistosomiasis .

- **21st-27th August** Director Tang Lin-hua and Associate Prof. Chen Jiaxu attended the "Training of Trainers Course on Preventive Maintenance, Care and Repair of Clinical Laboratory Microscopes" in the Philippines, and visited Office of ACT Malaria and WHO/WPRO.
- **23rd – 26th August** Deputy Dirctor Zhou Xiaonong attended the "19th Symposium of International Zoology" in Beijing, and held the group meeting of "International Important Zoonoses" twice as chairman.

- **1st – 29th September** "Training course of human parasitology and professional English" was held by the Institute. The 2003 graduated students and students for Ph D in 2004 and recruits of the Institute were trained in the course.

- **6th – 10th September** Deputy Director Zhou Xiaonong attended the International Conference on Establishing a Global Program for Combating Cysticercosis, in Bellagio, Italy.

- **9th September** Director General Wang Yu of China CDC supervised the Institute's work, and visited the Museum for Medical Parasitology, Entomology and Molluscology, and Director Tang Linhau, etc. reported the relevant works, respectively.

- **9th September** As the Director of WHO Collaborating Center for Malaria, Schistosomiasis and Filariasis, Tang Linhua was covered by the journalist from Shanghai TV station, when the 55th Executive Board Meeting of WHO/WPRO held in Shanghai, and the matter covered was televised at the News Channel and the Orient Satellite TV on 17 September.

- **15th September** Prof. Zhou Xiaonong, Zheng Jiang, Guo Jiagang and Associate Prof. Wu Xiaohua were appointed as Chairman, Adviser, member and secretary respectively in the Expert Advisory Committee on Schistosomiasis, MOH.

- **16th September** The staff of the Institute was organized to have a physical examination in the Center of Physical Examination, Shanghai Workers Medical College.

- **17th September** Two projects, i.e., "Improvement on the synthesis engineering and novel form of molluscicide bromoacetamide " and "Study on pharmacodynamics and pharmacokinetics of novel broad-spectrum parasiticide" were supported by funds from the key research project of Shanghai Committee for Sciences and Technology.

- **17th – 19th September** Dr. Hurley, Financial Manager from Global Funds visited our Institute.

- **20th September** The working meeting on diseases control was held in our Institute, Director Tang Linhua reviewed and sumed up the work of our Institute's diseases control in first two seasons, and deployed the works next half year.

- **27th September** The project of "Digging drug targets against schistosomiasis japonica" was supported by the National Natural Science Foundation of China (Youth Funds).

- **28th September** Director Tang Linhua and Deputy Director Zhou Xiaonong attended the meeting of the Degree Committee of China CDC, and two master supervise teachers were approved and thesis of 4 master students passed through review by China CDC Degree Committee.

- **30th September** The Institute Bio-security Committee was established, Prof. Tang Linhua as the director of the committee , and the leading group of supervision on security labor was also built, deputy director Xu Xuenian as chief. The first meeting was held, and the tasks of the two organizations in the near future was arranged.

- **11th – 12th October** The "Training courses on laboratory bio-security" were held twice, and a total of 80 laboratory managers and professional staff attended.

- **15th – 20th October** Relevant experts from whole country were organized to investigate treatment policy implemented for advanced schistosomiasis, and standardized current treatment approaches for advanced schistosomiasis.

- **17th October** The meeting on the criteria of eliminating several parasitic diseases was held, and relevant criteria was evaluated.

- **18th October** The two projects of Tenth Five-year Plans, "Study on the impact of ecological changes on schistosomiasis transmission and intervention measures" and "Study on the control of outbreak transmission and the potential transmission of malaria in endemic areas with *Anthropophagus* as vectors" were further funded for the next two years.

- **25th October** The regular activities of the democratic party were carried out, Xu Guihua, Deputy Secretary of Party Committee from China CDC, Tian Zhanping, Vice Director of Party Committee Office from China CDC, Feng Weizhong, Deputy Secretary of Discipline

Inspection Committee of Shanghai Bureau of Health and Lu Xinxin, Deputy Chief of Department of Organization of Shanghai Bureau of Health attended the meeting.

- **26th October** The meeting of inviting public bidding for constrution of the Emergent Arbo-disease Laboratory was held, the experts of Shanghai Animal Management Committee, designing unit, the principals of the Discipline Inspection Commission and Capital Construction Office reviewed three units' papers of bid for the project.

- **27th – 29th October** The second term training course for operational cadres was held.

- **28th October** The openning ceremony of the "Engineering of rebuilding emergent Arbo-disease Laboratory" and "Museum for Medical Parasitology, Entomology and Molluscology" was held respectively, Zhao Zhilin, Deputy director of Department of Pragramme and Finance, Qi Guixin, Chief of Department of capital construction of MOH, Zhao Huifen, Chief of Department of Science and Technology of China CDC, Zhang Kan, Vice Chief of Department of Science Research of Shanghai Bureau of Health, and leaders from brother institutions joined the ceremonies.

- **3rd – 9th November** Four persons including Director Tang Linhua, attended the " 4th Workshop for the Implementation and Evaluation of KOICA's Project" in South Korea.

- **9th November** Two persons, including Deputy Director Zhou Xiaonong, attended the "Workshop on establishment of E-stage for natural resources" held by Ministry of Science and Technology in Beijing.

- **10th November** Discussed seriously by the members of the group of inviting public bidding for SPF level animal laboratory and Capital Construction Office, Suzhou Jinyan Equipment Company got the bid.

- **14th November** Three persons including Deputy Director Zhou Xiaonong attended the "Workshop on managing measure and technologic scheme of the project of schistosomiasis control and prevention funded by the central supported the locally administration health work organized by MOH, in 2004 in Beijing".

- **25th November** Ms.Wang Ling was elected as a deputy to the 13th Luwan District People's Congress.

- **25th November** A meeting of Academic Board of the Institute was sat to examine the

projects of mid-aged and youth science fund, and three projects were supported.

- **29th November-2nd December** The "Bi-regional Meeting for Control of Malaria in East Asia" was successfully held in Shanghai, 17 delegations from China, DPRK, South Korea and 18 Officers, temporary advisers from WHO, WHO/WPRO, WHO/SEARO and other countries attended the meeting.

- **4th – 5th December** "National workshop of implement project for malaria and schistosomiasis surveillance" and the "3rd National workshop of expert group for sampling epidemiological survey for schistosomiasis" were held in Shanghai. Wang Liying, Chief of Schistosomiasis Control, Department of Disease Control of MOH and the members of expert group attended the meetings.

- **7th – 10th December** Director Tang Linhua and Deputy Director Zhou Xiaonong attended the "40th Anniversary Meeting for US-Japan Cooperative Medical Science Program" in Kyoto, Japan.

- **16th December** Director Tang Linhua cut the ribbon at the opening ceremony of using building No 3, and the staff eatery began to provide lunch to every staff member free of charge.

- **22nd – 24th December** The meeting for revising "Data Analysis for the 3rd National Sampling Epidemiological Survey on Schistosomiasis" was held, and the data were discussed and revised. The preliminary draft of the survey had been completed.

- **22nd – 24th December** Entrusted by MOH and China CDC, our Institute held the "Meeting of editing manual for the personnel against schsitosomiasis at grass roots and training outline of country leaders" in Wuxi, the participants discussed and edited outline of the training course and contents of the manual.

- **24th December** The mobilization meeting of special allowance granted by the State was held in the Institute of Parasitic Disease, the Vice Secretary Xu Guihua made a mobilization to the staff of our institute, and Director Tang Linhua deployed how to carry out the purpose of the document from China CDC.

- **24th – 31st December** Entrusted by MOH, the relevant experts from our Institute went to Hunan, Hubei, Jiangxi, Anhui, Jiangsu, Sichuan, Yunnan Provinces, to review the investigation on the epidemiology of schistosomiasis.

- **27th December** The reporting operational cadres' work meeting of the Institute was held.

- **28th December** Deputy Director Zhou Xiaonong, etc. attended the "Workshop of programme for schistosomiasis control and prevention" in Beijing.

- **31st December** The security working meeting was held, and Director Tang Linhua requested the security check must be carried out everywhere, the hidden trouble must be eliminated, and the dead angle should not remain to insure the safety of our Institute during the holidays of new year. After the meeting, the status of the secutity of our Institute was examined by 3 groups.

§9.服 务 窗 口 介 绍

人体寄生虫和媒介标本展示馆

从人类开始认识寄生虫以来，确诊寄生虫感染的主要依据是发现病原体。近年来，虽然分子生物学和免疫血清学技术发展突飞猛进，但寄生虫病原学检查仍然必不可少。

当前，寄生虫病仍严重影响着我国广大劳动人民的身体健康，影响国民经济的高速发展，寄生虫病控制是一项长期而艰巨的任务。因此寄生虫及其媒介标本在寄生虫病防治实践、科研和教学工作中有着不可估量的作用，而且也是开展全民健康教育、促进群体健康的极好材料，在国家经济建设和科学发展中具有重要的地位。

我所的前身是国立中央卫生研究院华东分院，1950 年前就藏有各种医学原虫、蠕虫和昆虫标本百余种。老一代寄生虫学家洪式闾、毛守白等对寄生虫和媒介标本的收集倾注了大量的心血。寄生虫及其媒介标本的积累是从事本专业的科研和防治人员长期艰巨工作的结果。

本馆寄生虫和媒介标本按学科分类：医学原虫、医学蠕虫、医学昆虫和医学贝类陈列，各虫种基本上按动物学分类阶元：门、纲、目、科、属、种排列。目前标本馆约有吸虫标本 46 种、绦虫标本 59 种、线虫标本 73 种、原虫标本 7 种和棘头虫标本 1 种，其中罕见寄生虫标本约 20 种。媒介蚊虫标本约 50 种、白蛉标本 10 种和医学贝类标本 58 种。

中国人体寄生虫和媒介标本的收集、整理和保存获得国家科技部中央级科研院所科技基础性工作专项资金资助。衷心希望标本馆能成为健康教育的基地，成为预测和预防危害人类健康和环境的新的突发的寄生虫病的平台，成为联系国内外同行的桥梁，为我国寄生虫病防治服务。

§ 9 . INTRODUCTION OF WINDOW'S SERVICE

MUSEUM FOR MEDICAL PARASITOLOGY, ENTOMOLOGY AND MOLLUSCOLOGY

Since the discovery of human parasites, confirmatory diagnosis of parasitic infection has been depending on the recognition of the pathogen. Although the techniques of molecular biology and immunological serology are highly developed recently, parasitological examination is still the most important method for diagnosing the infection.

Parasitic diseases constitute major human health problems at present, and impede economic development in China. It is a long task to control the disease.

The specimens of parasites and vectors play an important role in the control and prevention of parasitic diseases, and also in parasite research. Meanwhile they are also the excellent materials for health education.

The Institute of Parasitic Diseases was former part of the National Institute of the Health. It preserved specimens involving over a hundred species of human parasites before 1950. Eminent parasitologists, such as Professors Hong Shilü and Mao Shoubai, paid close attention to the collection of the specimens. The accumulation on the specimens of parasites and its vectors was the results of the efforts of the scientific workers and doctors engaging in control and prevention for parasitic diseases for a long time.

In this museum the specimens are arranged in four groups: medical protozoology, helminthology, entomology and molluscology. They are displayed according to the classification of animal parasites: phylum, class, order, family, genus and species. At present, parasite specimens cover about 7 species of protozoa, 46 of trematodes, 59 of cestodes, 73 of nematodes and 1 of acanthocephalans. For vector specimens there are about 50 species of mosquitoes and 10 of phlebotomus. 58 species of medical molluscs are also included in the museum.

The project of collection, arrangement and storage of the human parasite and vector specimens in China was supported by the government. We hope this museum will become the foundation for health education, prediction and prevention with respect to parasites and pathogens that pose risks to the health of humans and environment, and a bridge for communication among the parasitologists in the whole country and globally, and finally serve for the control and prevention of parasitic diseases.

中国疾控中心主任王宇来所检查指导工作，并参观了新建的人体寄生虫与媒介标本展示馆

Dr Wang Yu, Director of the China CDC, visited the Museum for Medical Parasitology, Entomology and Molluscology during his inspection at the institute

人体寄生虫和媒介标本展示馆
Museum for Medical Parasitology, Entomology and Molluscology

急性虫媒传染病实验室改造工程开工仪式

Opening ceremony for the reconstruction of the Laboratory for Acute Vector-borne Communicabel Diseases

全球基金中国疟疾项目第五轮申请研讨会
Workshop on the 5th round application to GFATM for China Malaria Project

WHO专家组对我国消除丝虫病实施情况进行预测评估和实地考察

Field evaluation for the Filariasis Elimination Program in China by a WHO expert group

印度尼西亚卫生部副部长来我所访问

Visit of the Indonisian Vice-Minister of Health at the institute

寄生虫病所学术委员会会议

Meeting of the academic board of the insititute