中国疾病预防控制中心寄生虫病预防控制所



2007

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



▲ 非洲国家传染病防治研修班于2007年6月12日~7月1日在上海举办



▲ 由WHO西太区办事处和亚洲疟疾培训网络主办的疟疾镜检员能力评估培训班 于2007年7月7日~13日在上海举办



▲ 亚洲血吸虫病及重要蠕虫病网络第七次会议于2007年9月5日~9月7日在云南召开



▲ 发展中国家疟疾、血吸虫病防治研修班于2007年10月在上海举办

by National Institute of Parasitic Diseases, Chinese Center for the center of the cent

▲ 首届地理空间卫生学国际学术会议、全球地理空间卫生学网络第五次工作会议于 2007年9月8日~9月11日在云南召开



▲ 热带病研究方向研讨会于10月25日在上海召开,TDR主任Dr.Ridely出席并讲演



▲ 胡薇研究员获中华全国妇女联合会、中国科学技术协会、中国联合国教科文组织 全国委员会和欧莱雅中国颁发的2007年度中国青年女科学家奖

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▲ 全国土源性线虫病防治暨监测培训班于2007年6月在江西省召开

包虫病流行病学及防治研讨会 SEMINAR ON EPIDEMIOLOGY AND CONTROL OF ECHINOCOCCOSIS



▲包虫病流行病学及防治研讨会于2007年11月在上海召开

中国疾病预防控制中心 寄生虫病预防控制所

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ANNUAL REPORT

2007

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

上海 ● SHANGHAI

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§1.2007 年工作总结及 2008 年工作要点

2007年工作总结

2007年是构建和谐之年,也是我所在新起点上努力开拓、奋力进取的一年,在党的十 七大精神和"三个代表"重要思想指引下,以科学的发展观为指导,坚持以人为本,科学发 展,以发展促和谐,进一步发挥国家级寄生虫病专业所的作用,提高了疾病控制能力和科 研水平,较好地完成了年初制定的各项工作目标,为保障人民健康和构建和谐社会做出贡 献。

现将我所 2007 年的行政业务工作总结如下:

1 站在全局的高度,继续推动全国的寄生虫病防治工作

1.1 血吸虫病防治

1.1.1 全面推动全国血吸虫病综合治理

2007 年是全国血吸虫病综合治理的关键年,根据《全国血吸虫病综合治理规划纲要 (2004-2008 年)》要求,全国血吸虫病流行区要达到疫情控制目标。受卫生部委托,我所 以点带面,组织开展了血吸虫病综合治理五个联系点驻点挂职工作,参与、督导各联系点 的综合治理;组织专家召开一系列会议,起草了《血吸虫病防治地区疫情达标考核方案》 和《病人数推算方案》,对各流行省开展疫情达标预评估和综合治理现场考核、督导,为 全国血吸虫病综合治理中长期规划的 2008 年达标考核奠定基础。

此外,为督促各省落实开展以传染源控制为主的综合治理措施,我所组织专业人员赴 各省流行区县进行有螺洲滩禁牧暗访、综合治理工作质量抽查等,根据调查结果及时向卫 生部疾控局反馈了意见和建议。

1.1.2. 加强技术支持,积极开展督导与调研

血吸虫病综合治理工作涉及部门多,覆盖面广,工作难度较大,我所多次组织相关专 家就不同地区、不同专题开展了现场技术指导和调研,为血吸虫病防治现场提供技术支持。 如配合卫生部选派多名专家赴各省参加《血吸虫病防治条例》宣讲活动;选派专家先后赴 湖北、湖南、安徽、四川等省参加血防条例宣讲;赴江西省进贤县综合治理联系点开展机 耕道建设调研并帮助进贤县制定和完善机耕道工作方案;对四川省血防达标地区的效果巩 固策略进行现场调研,并召开专家现场研讨会;参加长江水利委员会组织的四川、湖北、 安徽等地的多项水利血防工程的论证;开展了洞庭湖区东方田鼠血吸虫病感染情况调查; 对各省有关灾区开展洪灾期间急感防控工作督导和调研工作;协同 WHO 官员对江西、云 南等省血防工作情况进行现场督导调研等。

1.1.3. 积极探索全国血吸虫病健康教育试点工作

我所在各流行省建立了血吸虫病健康教育试点,探索预防急性血吸虫病有效方式,并 组织对各试点县进行全面的工作质量抽查和督导,及时调整思路和方向,研讨制定了全年 的工作重点;同时,为评估健康教育试点开展以来的效果,组织编制了《血防健教评估方 案》、《健教试点考核评估方案》和健康教育评价题库,对各试点进行了现场考核和现场预

试验。

1.1.4. 加强学术交流与培训

为研讨血吸虫病防治工作中不断出现的问题和难点,并提出具体解决办法,加强相互 交流与学习,我所组织举办或召开了多次防治工作会议、培训班和国际会议,如:在安徽 马鞍山举办了"全国血吸虫病流行省、市血防办主任、血防所所长培训班";在上海组织召 开了"血吸虫病检测试剂应用策略研讨会";在云南丽江召开"WHO/TDR 血吸虫病诊断工作 会议"、"首届地理空间卫生学国际学术会议";在安徽芜湖举办"2007 年全国血吸虫病监测 点病原学诊断方法技术考核竞赛",在四川成都举办"山丘地区血吸虫病防治策略培训班" 等。

1.2 疟疾防治

1.2.1 继续开展全国疟疾疫情监测工作

根据《全国疟疾监测方案》(试行),我所组织召开了全国疟疾监测工作会议,对全国 疟疾监测点工作数据及时进行了汇总分析。为全国疟疾监测点统一制作并下发了抗原片、 药品抗性测定板等,组织专家对全国疟疾各监测点工作落实情况开展现场督导和调研,并 收集监测数据进行汇总分析。

为进一步完善《全国疟疾监测方案》(试行),提高疟疾监测的科学性和可操作性,多次组织专家对现行疟疾监测方案进行了研讨,听取基层技术人员的意见,对该方案进行了 修订和完善。

认真做好疟疾疫情分析和报告工作,高发季节每天关注网络直报疟疾病例报告情况, 及时完成疟疾疫情周报分析,并预测疫情趋势。完成 WHO 疟疾疫情报表等数据整理工作, 协助卫生部修订了疟疾防治年度报表和需求报告。

1.2.2 加强技术支持,遏制黄淮平原地区疟疾疫情回升态势

为加强对安徽省疟疾重点流行县夏季高发期疟疾防控的技术指导,选派5位同志驻点 在安徽省亳州地区5个疟疾发病较严重的县疾控中心,巡回督导春季休止期治疗强化行动, 并进行休根效果现场评估。在传播季节组织人员驻点3个月,直接参与当地开展的疟疾强 化防控工作。结果表明,安徽省春季休止期全程服药率达到95%以上。我所还积极协调抗 疟药品的生产和供应,为控制安徽省疟疾疫情提供了必要的药品储备。

组织专业人员在安徽、河南两省重点地区开展了疟疾媒介调查和防治措施试点研究和 评价,为探讨中部地区遏制疟疾回升的有效对策提供依据。

1.2.3 援非、援藏疟疾防治技术支持

由于西藏地区疟疾防治力量薄弱,我所重点抓了援藏驻点和媒介调查两项工作。首批 选派2名疟防专业人员于6月中旬赴西藏林芝地区墨脱、察隅两县驻点3个月,指导当地 疟疾防治与监测工作,并开展相关的技术培训。7月至8月间,选派3名疟疾防治专家分 别对西藏林芝地区墨脱县和察隅县开展了为期1个月的传疟媒介专项调查,初步确定了当 地传疟媒介及其生态习性,为开展下一步防控工作提供了基础资料。

为落实我国政府在非洲国家援建抗疟中心的承诺,我所专家配合商务部和卫生部赴非 洲现场考察了援建抗疟中心的需求,研讨具体工作,组织专家起草编制了《援非疟疾培训 教材》,并制定了培训计划。

1.2.4 结合现场防治,积极开展技术支持和培训

根据近年来发布的有关疟疾防治技术方案、标准和规范,我所开展了大量的结合现场 防治的技术支持和培训。如:配合卫生部在南宁组织召开"全国疟疾防治技术方案培训班"; 组织专家对重点省各级镜检技术水平和能力进行评估,通过评估掌握了我国基层镜检的能 力水平,为进一步提高传染源发现能力和开展相关的培训工作提供了需求分析依据;组织 专家对贵州省疟疾基线调查工作开展了现场督导、调研;对疟疾技术方案及抗疟药物使用 原则与用药方案进行了修订;制订了"疟疾防治与处理原则"等。

我所承担的全球基金中国疟疾项目进展良好,第一轮全球基金中国疟疾项目进展顺利,第五轮项目工作已全方位开展,已经取得了较好的成绩。

1.3 其他寄生虫病防治

1.3.1 认真完成土源性线虫病监测工作

完成 2007 年土源性线虫病监测数据的整理汇总、分析及总结报告。组织专家赴土源 性线虫病监测点调研。统一采购和下发了监测器材;对全国 31 个省(市、自治区)的专 业人员开展"14 岁以下儿童蛔虫感染监测"项目业务培训;组织专家开展了监测点样本的复 核工作。

1.3.2 总结经验,扩大寄生虫病综合防治示范区示范效应

示范区开展工作一年多来,取得了明显的成效。为进一步推动各示范区各项工作的进程,今年3月-4月,我所组织专家对各示范区基线调查粪检样本进行了抽样复核,并分赴 各寄生虫病综合防治示范区进行服药驱虫活动的督导,了解各点开展服药驱虫活动进展及 存在的问题。配合卫生部疾控局召开了"全国寄生虫病综合防治示范区工作经验交流会", 总结了一年来示范区工作的成绩与经验,分析了存在的问题和薄弱环节,探讨了示范区下 一步工作安排,推动了各示范区工作的进程;召开全国寄生虫病综合防治示范区防治对策 研讨会,探索防治新技术,提升示范区技术含量;组织制定了《综合防治示范区中期考核 方案》,并于11月开始对各示范区开展了中期考核,目前考核进展良好。 1.3.3 积极开展包虫病防治项目技术支持和督导

为推进全国包虫病防治项目的进程,我所配合卫生部在青海西宁举办了"全国包虫病防治技术培训班",召开了"《包虫病防治手册》审稿会";组织专家起草完成了《包虫病药物治疗方案》,启动了宁夏泡型包虫病流行区的防治试点、四川石渠县包虫病的防治试点工作。加大了督导力度,分别对内蒙古、新疆、青海等省包虫病防治项目的组织和管理、项目经费、设备和药品采购和到位情况、人员培训、项目区具体的实施计划和方案、基线调查结果、病人治疗和防治措施的落实等方面进行了督导检查。配合卫生部在四川成都举办了"包虫病防治项目经验交流会",总结并交流了包虫病防治项目的主要工作经验。1.3.4 消除丝虫病后续工作

达到消除丝虫病标准是我国寄生虫病防治工作的重要里程碑,但消除丝虫病后的监测 和慢性病人照料关怀工作更不可忽视,我所坚持每天对网络报告的所有丝虫病病例进行核 实和病例侦测,对各地慢性丝虫病病人的关怀照料开展技术培训和督导;对浙江、贵州和 重庆等省市的慢性丝虫病患者关怀照料工作的组织管理情况、实施情况、实施效果与监督 考核情况进行了督导和调研。 《丝虫病消除标准》获2007年度中国标准创新贡献三等奖。

1.3.5 积极开展培训和试点,加强黑热病防治技术储备

为加快提升技术水平和专业技术人员的培养,我所启动了甘肃犬源型黑热病的防治试 点——犬佩戴溴氰菊酯药浸项圈防治黑热病成果评价现场工作,分别在甘肃和新疆举办黑 热病防治技术培训班,促进了当地黑热病防治工作的开展。

1.3.6 积极探索媒介防治工作新方法

受卫生部疾控局委托,在南方重点9省开展了广州管圆线虫宿主扩散与传播作用的调查,对广州管圆线虫的中间宿主、终末宿主的分布、感染情况进行了调查,并收集保存了 宿主和虫种标本。初步整理完成了我国第一次广州管圆线虫疫源地调查的报告和文件资料 汇编。

组织专业人员新疆黑热病病人与疑似病人地区、流行情况不明的若羌县和民丰县等开 展了黑热病流行病学、媒介白蛉和动物宿主现场调查工作,并对诱蚊灯和各种引诱剂进行 了现场试验。

此外,为钉螺控制工作提供技术支撑,组织开展了钉螺新发和复现地区的现场钉螺采 集和调查工作;为了解中缅边境疟疾传播媒介种群分布状况和改进蚊媒监测方法,在云南 开展了疟疾传播媒介按蚊分布调查,在河南郑州举办了全国寄生虫病媒介调查培训班,在 山东济南举办了全国钉螺控制技术及灭螺新技术推广培训班,完成了《查灭钉螺》、《钉螺 控制课件》等多媒体培训教材一套。

1.4 快速响应,不断增强突发疫情应急处置能力

今年寄生虫病突发或暴发疫情3起,其中贵州省从江县发生一起疟疾突发疫情,江西 省上饶县出现疟疾集中暴发,广西区富川县发生一起丝虫病残存疫点疫情。疫情出现后, 我所专家积极应对,及时响应,在较短的时间内完成了疫点分布范围调查,并采取了有效 控制措施,反映出我所专家较强的应急处置能力和对突发事件的敏感性。

我所对贵州省从江县疟疾突发疫情、广西区富川县丝虫病疫情的妥善处置,得到了卫 生部和中国疾控中心的表扬,在处置丝虫病残存疫点过程中,世界卫生组织对我国丝虫病 监测工作给予了高度评价。

2 加强科学研究与重点实验室建设

一流的疾控依赖一流的科研,一流的科研推动一流的疾控。围绕重要寄生虫病的防治 需求,在学科前沿开展国内外合作攻关,为寄生虫病突发疫情和突发公共卫生事件的应急 处置提供技术支撑,同时培养和造就一批高层次的专业人才。

2.1 课题执行和申请情况

2007 年在研课题 26 项,其中"863"计划 1 项,国家科技基础条件平台工作 1 项,科 技部科研条件工作 1 项,科研院所社会公益研究专项资金 2 项,国家自然科学基金重大项 目 1 项,国家自然科学基金面上项目 3 项(含参加 1 项),卫生部艾滋病防治研究项目 1 项(参加),上海市科委项目 3 项,国际合作项目 6 项,所中青年基金 5 项,横向课题 2 项。在研课题共到位经费 700 万元左右。

2007年申报课题 16项,获准课题 11项,其中国家 863 计划 1项,国家自然科学基金

2项,国家科技支撑1项,科技部种质资源平台项目1项等,获准经费1272.5万元。

组织撰写十一五重点研究领域与关键技术立项建议书3项,申请上海市地方匹配资金 项目2项,根据《上海市加强公共卫生体系建设三年行动计划》的要求,组织有关专家撰 写公共卫生重点学科建设——医学寄生虫病学与寄生虫病防治申请书1项。

2.2 成果与论文

《嗜人按蚊地区疟疾流行潜势及控制暴发流行的研究》和《生态环境变化对血吸虫病 流行态势的影响及干预措施研究》2个课题获中华预防医学会科技进步奖二等奖,并分获 中华医学奖二、三等奖。《抗血吸虫雌雄虫合抱发育基因工程疫苗的研究》和《新型广谱 驱虫药 9901 药理、药效学研究》2个课题均通过验收。

2007 年我所牵头申请专利 2 项,获发明专利 2 项,即《日本血吸虫中国大陆株硫氧 还蛋白基因及其克隆表达方法和应用》、《一种药用化合物及其驱虫用途》。全年在国内外 发表论文 63 篇,其中被 SCI 专业期刊收录 15 篇。

由于胡薇研究员在科研工作中的出色表现及卓越贡献,荣获中华全国妇女联合会、中国科学技术协会、中国联合国教科文组织全国委员会和欧莱雅公司颁发的中国青年女科学家奖,受到表彰。

2.3 科研平台建设取得新突破,促进了学术交流

经过认真组织、精心准备,挂靠在我所的卫生部寄生虫病原与媒介生物学重点实验室 顺利通过了由卫生部组织的卫生部重点实验室评估,并获得卫生部科教司的表扬,在 50 个参评实验室中总评分列第五名。

启动卫生部寄生虫病原与媒介生物学重点实验室开放课题基金,经过招标,今年资助 2个课题,资助经费10万元,为促进相关领域科技进步和人才培养提供了平台。

为及时解决现场防治工作中遇到的各项技术瓶颈,我所组织开展了寄生虫病虫种资源 平台、血吸虫病诊断试剂评估平台和药物筛选技术平台等平台项目的研究,为现场应用做 好相应的技术储备。

利用举办全国培训班的机会,积极宣传已颁布的寄生虫病标准,提高了专业人员对标准的了解水平,挂靠在我所的寄生虫病专业标准委员会顺利通过了卫生部标准委员会外评估工作组的评估。

继续加强同 WHO 的联系与合作,发挥我所作为 WHO 疟疾、血吸虫病与丝虫病合作 中心的作用,积极向 WHO 等机构申请课题,全年申请 3 项,其中 2 项已获批准。

为贯彻胡锦涛总书记在 2006 年中非论坛上的讲话精神,落实我国对非洲国家的承诺,帮助发展中国家培养人才,受商务部委托,我所选派专家分批赴非洲有关国家筹建疟疾防治中心;承办了"非洲国家传染病防治研修班"和"发展中国家疟疾、血吸虫病防治研修班",来自非洲、亚洲、南美洲、欧洲 37 个国家的 88 名官员参加了研修,两个研修班均取得圆满成功。我所还承办了"国际间日疟防治会议"、"寄生虫病疾病负担评价培训班及亚洲血吸虫病及重要蠕虫病网络第七次工作会议"和"热带病研究方向研讨会"等重要国际会议,使我所有更多的机会参与国际间交流,也在国际上展现了我所作为寄生虫病防治和科研国家队的形象。

本年度接待外宾18批,179人次,出访24批,26人次。

3 完善用人制度,加大人才培养力度

成立了所人才工作领导小组,制定了《寄生虫病所人力资源发展计划和实施办法》, 经个人申请、部门推荐、资格审查、笔试、专家组面试、评审、无记名投票等程序,并通 过所人才工作领导小组审议、公示,16位同志被列为人才培养对象,他们分别与所签定"人 才培养协议书",协议明确了培养期内各自应承担和完成的工作,协议书在经费支持、培 养期满的考核指标、违约责任等方面也做了规定。

根据本所有关选派国务院血吸虫病防治驻点人员的通知要求和本所人力资源发展计划,组织选拔驻点挂职人员。经过一定程序,5名专业技术人员分别派往湖北等5省血防联系点进行为期8个月的技术支持和挂职锻炼工作。在选派中,注意做好思想政治工作, 对有生活实际困难的同志给予关心和帮助,使工作较顺利地完成。

为进一步推进和深化人事制度改革,完善岗位聘用管理,根据《中国疾病预防控制中 心岗位设置和聘用工作实施方案》精神,经调研和测算,制定实施细则,本着公开、公平、 公正的原则组织开展本所岗位设置工作,经过一系列程序后,将按照中心规定,逐级签订 聘用合同,并按聘用岗位,确定相应的工资待遇。所有新入所职工在完成轮岗锻炼后均通 过竞聘上岗。

4 加强培训工作和内涵建设

加强岗位培训,举办了包括"钉螺控制技术及灭螺新技术推广培训班"、"寄生虫病诊断 技术培训班"和"全国媒介调查培训班"等各类培训班 18 个,参加人员 1325 人次,提高了各 类业务人员的专业水平。

组织相关人员参加研修班、讲座、网络学习和现场实践等,择优选派 20 余人到国外 学习、交流和培训。

5 推进创建文明单位工作,文明单位建设上一新台阶

以精神文明建设为抓手,进一步深化了社会公德、职业道德教育,加强文化建设,发 扬艰苦奋斗、奉献进取的疾控精神,开展了《缅怀毛守白教授,弘扬勤奋、严谨、奉献精 神》的系列活动,弘扬毛守白教授严谨治学、献身科学的精神。在完善内部管理规章制度 的基础上,开展了为期一个月的规章制度宣传月活动,并加大执行和检查考核的力度,经 过全体职工的共同努力,本所再次被评为上海市卫生系统、卫生局文明单位(至今已连续 20年10届),上海市平安单位和上海市治安安全合格单位,为创建上海市文明单位打下良 好的基础,文明单位建设上一新台阶。

6 围绕所的中心工作,完成其他各项任务

6.1 三苯双脒四期临床工作已圆满结束,临床试验进一步证实三苯双脒对肠道线虫有效和安全。三苯双脒治疗牛、羊肠道寄生虫感染试验年底结束。着手准备国际注册申请工作,使本所具有独立知识产权与专利权的国家级新药,更好地造福于民。

6.2 完成"环境优化"、"职工之家"等基建工程,全面翻新和改造所主干道路面及给排 水管道。所内环境进一步改善,为职工工作、学习营造良好的氛围,也为争创合格的"职 工之家"完善了硬件建设。急性虫媒传染病实验室改造工程等 3 个基建项目通过工程决算 经费审计,使用规范,获得好评。 6.3 图书馆购置了数字化管理系统,并初步建立了图书、期刊目录数据库,更换了图书电子借阅卡,完成图书馆工作人员的软件使用培训,逐步实现了图书馆书目电子化管理;购置了 343 本新书及 46 本外文图书,包括边缘、交叉的学科图书,增订了部分原版期刊 5 种,对 500 余册珍贵的破损旧书作了修缮。

我所编辑出版的《中国寄生虫学与寄生虫病杂志》获中华预防医学会期刊杂志一等奖。

6.4 加强"一馆两库"建设,扩展寄生虫病原与媒介标本库的储存空间,扩大虫种储藏 数量。采集稀有和罕见的寄生虫标本,将寄生虫标本分装储存,并录入计算机建立标本数 据库,增添生动直观的图片资料。人体寄生虫和媒介标本馆全年接待中外来宾420人次。

6.5 加强后勤管理和国有资产管理,完成国有资产的清产核资工作,截止 2007 年底,本所固定资产总额为 3424 万余元;认真做好《国家公共卫生应急反应体系建设第二期仪器设备配置》仪器设备验收、安装调试等工作,目前大部分设备已投入使用;通过公开招标程序,在 17 家投标单位中招选 5 家中标,完成 2007 年度本所 13 大类 27 件(台),总额 176 万元人民币仪器设备专款购置项目。

尽管我们取得的成绩来之不易,但是目前寄生虫病防治面临的任务仍很繁重、艰巨, 一些寄生虫病呈上升趋势尚未得到有效控制,我们要以积极进取的姿态,在党的十七大精 神鼓舞下,同心同德、开拓进取,发扬脚踏实地、埋头苦干的工作作风,牢固树立科学 发展观,为推动寄生虫病防治事业而不懈努力。

2008年工作要点

2008 年是全面落实党的十七大精神的一年,也是我所站在新的起点,实现新跨越的一年,我们要认真学习党的十七大精神和"三个代表"重要思想,深刻领会科学发展观的科学内涵、精神实质和根本要求,同心同德,开拓进取,求真务实,以改革创新的精神加强和谐寄生虫病所建设,努力提高疾病控制能力和科研水平,以人为本,加强队伍建设和人才培养,以民为重,推进寄生虫病防治工作。

2008年的主要工作如下:

1 积极推进全国寄生虫病防治工作的全面开展

根据《全国预防控制血吸虫病中长期规划纲要》、《全国疟疾防治规划》和《全国重点 寄生虫病防治规划》等文件精神,立足现场,以点带面,发挥我所专家优势,集中全所力 量,重点开展以下工作:

1.1 血吸虫病防治

围绕《全国血吸虫病综合治理重点项目规划(2004-2008年)》的要求,配合卫生部开展达标考核和项目评估;开展《血吸虫病防治条例》后评估工作;结合培养和锻炼青年骨干,继续给予国务院联系点驻点技术支持,积极推进以传染源控制为主的综合治理策略并落实各项措施。

完成常规的全国血吸虫病监测、疫情分析以及各类技术指导和督导,继续组织实施全国血吸虫病健康教育试点工作,积极开展抗血吸虫病药物筛选平台和血吸虫病诊断试剂评估平台等建设;加强信息化管理的进程;开展以应用为主导的血吸虫病防治现场研究,加

大对基层血防专业人员的培训力度。

1.2 疟疾防治

积极关注网络直报,做好疫情周报分析,掌握全国疫情动态变化趋势;调整全国疟疾 监测方案,开展相关的培训;加大对重点省区疟疾防控的技术支持和督导力度;积极开展 援非疟疾防治中心建设的人员培训和技术指导,完成商务部或卫生部交办的援非培训任 务;加强流动人口疟疾防治健教宣传,继续加强对西藏疟疾防治的支持。圆满完成全球基 金中国第一轮疟疾项目的结题,第五轮疟疾项目的实施和管理,以及积极申请新一轮疟疾 项目。

1.3 其他寄生虫病

强化质量控制与评估,推进全国寄生虫病综合防治示范区工作;继续做好我国消除丝 虫病的后续监测;加强对中央转移支付包虫病防治项目和防治试点的技术支持、培训和督 导;探索黑热病防治试点工作经验,开展黑热病媒介调查和防治工作;结合《全国重点寄 生虫病防治规划》,制定重点寄生虫病控制标准;做好土源性线虫病的监测工作。 1.4 加强自身能力建设,提高应急反应和处置能力

加强寄生虫病病原和媒介鉴定、流行病学、防治策略和措施等方面的技术储备;加强 疾控工作体系、机制和队伍建设,重点加强计划、预算和制度管理,强化疾控防治项目的 管理;完善突发公共卫生事件应急反应机制建设,有效应对、处置各类寄生虫病突发疫情; 努力完成卫生部和中国疾控中心交办的各项任务。

2 加强科研项目与实验室质量管理

2.1 积极争取科研和国际合作项目,促进学术交流

在认真做好在研课题管理工作的基础上,组织科技人员积极申报 2008 年国家、部委和上海市的有关项目申报,特别是国家"973"项目、"十一•五"重大专项及科技支撑项目、国家自然科学基金、卫生公益性行业科研专项经费、国际合作项目等。积极组织申报中华医学奖、中华预防医学会奖和国家级奖。

进一步加强寄生虫病信息平台、寄生虫病药物研究技术平台、重要寄生虫媒介资源平台和寄生虫病诊断技术平台建设。

把学术交流活动作为一项经常性的工作来开展,积极邀请国内外知名学者来我所举办 讲座,不断扩大学术交流的内容和领域,拓宽科技人员的视野,提高科技人员的学术水平。

多年来,我所圆满完成了 WHO、商务部等交办的各类国际会议和培训班,发挥了我所 作为 WHO 疟疾、血吸虫病与丝虫病合作中心的作用(提供专家参与政策制定、技术指导、 网络协调),2008 年要继续承办 WHO、商务部等交办的各类国际会议和培训班,进一步扩 大和提升国际合作。

2.2 进一步加强实验室生物安全管理和能力建设

进一步加强实验室生物安全管理工作,确保实验室生物安全和生产安全。加强卫生部 寄生虫病原与媒介生物学重点实验室的建设和管理,加大开放、流动、竞争力度。按照有 关要求做好相关准备,完成本所实验室认可工作,积极准备,争取申报国家重点实验室立 项。

认真做好《国家公共卫生应急反应体系建设第二期仪器设备配置》仪器设备验收、安

装调试工作。积极争取 2009 年度本所仪器设备大购置项目立项,努力改善本所仪器设备 条件。

2.3 进一步加大人才培养和考核力度

牢固树立"人才资源是第一资源"的观念,在总结经验的基础上,根据《寄生虫病所 人力资源发展计划和实施办法》,组织 2008 年度高层次人才、紧缺人才、优秀青年人才培 养对象的选拔工作。对"能干"的人,要加大激励力度,对"想干事"的人,要提供事业 的舞台,同时将进一步加强激励和考核力度,促进优秀人才脱颖而出。

3 围绕工作中心,完成其他各项任务

3.1 进一步提高《中国寄生虫学与寄生虫病杂志》和《国际医学寄生虫病杂志》的编辑质量和学术水平,跟踪国内外重大基金项目,如国家自然科学基金、国家"十五"攻关和国家"863"、"973"项目及其他国际资助项目等,积极组稿,为重大科研项目的优秀论 文提供快速发表的"绿色通道"。

3.2 根据 15 层大楼可行性调研报告的结果,确定 1 号楼改建或大修及绿化改造工程 实施,并做好工程项目申报和管理工作,进一步改善所内环境。

3.3 进一步加强科技开发力度,关心职工生活,提高职工待遇,美化工作环境,改善工作条件。

3.4 认真做好离退休职工的住房补贴发放工作,积极推进并落实2000年以后新进所职工的住宿补贴工作。

3.5 加强管理,严格按照《寄生虫病所疾控项目管理办法》,规范各类防治项目的执行 和管理,确保各类疾控项目的顺利实施。

3.6 继续推动文明单位建设,创造条件,建设文明、整洁、和谐、有序、蓬勃的寄生 虫病所,积极创建上海市文明单位。

我们面临越来越繁重的任务,也是事业发展的重要机遇期,我们要以党的十七大精神 为指引,牢固树立科学发展观,勇于抓住机遇,敢于迎接挑战,以更加昂扬向上、奋发有 为的精神状态,再接再厉,扎实做好各项工作,为保障人民的健康,构建和谐社会做出贡 献。

§1. REPORT ON THE WORK IN THE YEAR 2007 & KEY POINTS OF THE WORKING PLAN FOR THE YEAR 2008

SUMMARY OF THE WORK IN 2007

2007 was the year when we built the harmonious society and when our institute innovated and progressed at a new beginning. Under the lead of the spirit of 17th Party Congress and the important thought of "Three Represents", we insisted on putting the human in a fundamental place, developing science and technology, promoting harmony by development. Our institute played the function as a national professional parasitic disease control institute, raised the capability of disease control and the level of scientific research, and fulfilled the tasks assigned at the beginning of the year, and made an important contribution to the people's health and the building of harmonious society.

Summary of the administration work in our institute in 2007 are as follows:

1 Promoting the national prevention and treatment of parasitic diseases on a overall situation

1.1 The prevention and treatment of schistosomiasis

1.1.1 Promoting the comprehensive treatment of schistosomiasis in China

2007 was an important year for the comprehensive treatment of schistosomiasis. According to the demand of "the outlines for the national comprehensive treatment of schistosomiasis (2004-2008)", the epidemic areas of schistosomiasis must achieve the aim of controlling the situation. Requested by Ministry of Health, experts of our institute were sent to hold a temporary post at five connecting locations, joined and supervised the comprehensive treatment of each locations. Experts organized and held a series of conferences, drafted " the examining program for the prevention and treatment of schistosomiasis in the epidemic areas" and " the calculating plan for patients' number ". They also evaluated the achievement of controlling the epidemic situation, examined and supervised in scene, and they laid the foundation for the examination of the medium-long term program on the comprehensive treatment for schistosomiasis.

In addition, in order to supervise and urge every province to carry out the comprehensive treatment which put the control of infection sources in priority, professional staff of our institute were organized to investigate the pasturing prohibition area in secret and survey the quality of the comprehensive management in epidemic areas, and gave advice and suggestion based on the investigating results in time.

1.1.2 Strengthening the technical supports and carrying out supervision and investigation actively

The comprehensive treatment of schistosomiasis is a difficult work that involves included many departments and covers many aspects. So related experts of this institute were organized many times to carry out technical guidance and investigation in scene according to different areas and specialized subjects, and offered technical supports for the prevention and treatment of schistosomiasis. For example, our institute associated with Ministry of Health organized many experts to publicize "the regulation of prevention and treating of schistosomiasis" in every province. We have sent experts to participate in the propaganda for the regulation of prevention and treating of schistosomiasis in Hubei, Hunan, Anhui, and Sichuan Province. We investigated the building protocol of the machine cropping road and helped enacting related work program in Jingong County, Jiangxiang province. We investigated the strategy for solidifying effectiveness in the areas of achieving the goal of preventing schistosomiasis in Sichuan province and had a discussion. We participated in the argument of many water conservancies construction in Sichuan, Hubei, Anhui province organized by the Yangzhi River Water Conservancy Committee We carried out the investigation of the infection situation of *Microtus fortis* in Dongting lake. We supervised and investigated the prevention and control of acute infection during flood in the disaster area, and to supervise and investigate the situation of prevention and control of schistosomiasis in coordination with WHO official in Jiangxi, Yunnan, and so on.

1.1.3 Researching on nationwide health education trial for schistosomiasis actively

Our institute established healthy education trial points for schistosomiasis in every epidemic province, explored the effective prevention method for acute schistosomiasis, spot-checked and supervised the work quality in every demonstrating county, adjusted direction in time, studied and discussed the focal point of the year. Meanwhile, in order to evaluate the effect of healthy education trial, we worked out "the evaluation program for health education of schistosomiasis", "the evaluation program for checking the health education trial of schistosomiasis" and the database for evaluating the health education, and examined and tested in scene in every location.

1.1.4 Strengthening the academic communication and training

In order to study and discuss the continual emerging problems and difficulty in the prevention and control of schistosomiasis, to work out solution and strengthen mutual communication and learning, our institute held or organized many working conferences, training classes and international conferences on the prevention and treating , such as the "national training class for directors of schistosomiasis preventing offices and heads of schistosomiasis institutes in Ma an-shan, Anhui Province, the seminar for the applying strategy of schistosomiasis testing agentia in Shanghai, the WHO/TDR working conference for schistosomiasis diagnosis and the 1th international academic Geospatial health meeting in Lijiang ,Yunnan Province, the 2007 technical examining competition for pathogen diagnosis from national surveillance points for schistosomiasis in Wuhu , Anhui Province, and the strategy training class for the prevention and treatment of schistosomiasis in hill region, and so on.

1.2 The prevention and treatment of malaria

1.2.1 Carrying out the national surveillance on epidemic situation of malaria

According to "program for national malaria surveillance " (in trial), our institute held the working conference for national malaria surveillance, and summarized and analyzed the working data from national malaria surveillance spots in time. We made and distributed the antigen sheets and the test papers for drug resistance to national malaria surveillance spots. We organized experts to supervise and investigate the working performances of every malaria surveillance spot and collected surveillance data for summarizing and analyzing.

In order to perfect " program for national malaria surveillance " (in trial) and raise the scientific and operative property of malaria surveillance, we organized experts many times to study and discuss the current program of malaria surveillance, listened to the advices from basic technicians, and revised and consummated this program.

We analyzed and reported the epidemic situation of malaria earnestly, and paid close attention to the case report of malaria by internet directly everyday during the high-incidence season, finished the weekly report analysis for malaria in time and predicted the tendency of epidemic situation. We accomplished the data sorting of malaria report forms for WHO, and helped Ministry of Health to revise the annual report form and demanding report of malaria prevention and treatment.

1.2.2 Strengthening the technical supports and stoping the bounce tendency of malaria in Huanghuai Plain

In order to strengthen the technical guidance for malaria prevention and treatment in summer which is high-incidence season in the point epidemic counties of Anhui province, we sent five experts to stay at five county centers for disease control and prevention in Haozhou, Anhui Province, where the incidence of malaria was serious. They supervised strengthening action during resting stage in spring and evaluated the effect of the prohibition of farming. We also sent staff to stay there for three months during spreading season, who participated directly the action of strengthening malaria prevention and control. It was showed that the rate of taking medicine was over 95% during resting stage in Anhui. We coordinated the production and supply of anti-malaria drugs and offered necessary drug storage for controlling the epidemic situation of malaria in Anhui Province.

We organized professional staff to investigate the vectors of malaria, and study and evaluate the trial of prevention and control in the focal point areas in Anhui and Henan provinces, which offered basis for discussing the effective measurement to contain the bounce tendency of malaria in the middle part of China.

1.2.3 The technical supports for the prevention and treatment of malaria in Africa and Tibet

Due to the weaknesses of malaria prevention and treatment in Tibet, our institute primarily carried out two events — setting a support location in Tibet and investigating malaria vectors. We sent two experts of malaria prevention to stay in Motuo and Chayu in Linzhi, Tibet for three

months in the middle of June. They gave guidance of the prevention, treatment and surveillance of malaria, and carried out related skill trainings. Between July and August, we sent three experts majoring in malaria to carry out the special investigation of malaria vectors for a month in Motuo and Chayu in Linzhi, Tibet. They preliminarily made sure of the vectors of transmitting malaria and their ecological habits, which offered basis for further prevention and control.

In order to fulfil the promises of our government that China would help building anti-malaria centers for African countries, experts from our institute, associated with Ministry of Commerce and Ministry of Health, went to Africa and inspected the demand of building anti-malaria centers and discussed details. In addition, we organized experts to compile "the malaria training material for supporting Africa" and formulate the training plan.

1.2.4 Combining with the prevention and treatment in scene, and actively developing technical supports and trainings.

According to those technical programs, standard and norms on malaria prevention and treatment published during the past few years, our institute carried out many technical supports and trainings incorporating with the prevention and treatment in scene. For example, cooperating with Ministry of Health, we held "the technical training class for national malaria prevention and treatment" in Nanning. We organized experts to evaluate the technical level and competence of microscopic examination in the intensive provinces, by which we know the basic level of microscopic examination in China, and it offered the demanding analysis basic for the capability of discovering epidemic sources; we organized experts to supervise and investigate the work of basic investigation of malaria in Guizhou; we revised the technical program of malaria and the applying principle and program of anti-malaria drugs; formulated "the principles for the prevention and treatment of malaria", and so on.

Our institute assumes the responsibility of the global found for malaria in China. The projects have been in progress smoothly. The first round and the fifth round were all well carried out and good results have been achieved.

1.3 The prevention and treatment for other parasitic diseases

1.3.1 Accomplishing the surveillance of soil-borne nematodiasis earnestly

Our institute completed the summary, analysis and report of surveillance data of soil-borne nematodiasis. We organized experts to investigate at the surveillance spots for soil-borne nematodiasis. We purchased and provided the machines for surveillance. We held the training of lumbricoides infection surveillance on children under 14 for professional staff from 31 provinces (cities, autonomous regions). We organized experts to carry out the re-checking the samples from surveillance spots.

1.3.2 Summarizing experiences and expanding the effect of the demonstration regions for comprehensive prevention and treatment for parasitic diseases.

The demonstration regions have achieved great progress since carrying out a year ago. In order to promote the development of the demonstration regions further, experts from our institute re-checked the stool examination samples of basic investigation from the demonstration regions in May and April, and supervised the helminthicide taking action in every demonstration regions of comprehensive prevention and treatment for parasitic diseases, and got some information about the related advancements and problems. We held the experience exchanging conference for the national demonstration regions of comprehensive prevention and treatment for parasitic diseases, on which summarized the achievements and experiences of the demonstration regions during the past year, analyzed the weaknesses and problems, and discussed the next program to promote the development of the demonstration regions. We held "the seminar on strategy for preventing and treatment in the national demonstration regions of comprehensive prevention and treatment for parasitic diseases", explored the new technique for prevention and treatment and raised the technical quality of the demonstration regions. We organized and formulated "the plan for middle term examination of demonstration regions of comprehensive prevention and treatment", and carried out the middle term examination from November, which went well at present.

1.3.3 Carrying out the technical supports and supervision for the prevention and treatment of Echinococciasis

In order to promot the development of the prevention and treatment for Echinococciasis, our institute, cooperated with Ministry of Health, held the technical training class for national Echinococciasis prevention and treatment in Xining, Qinghai Province, and the conference for contribution examination for "the handbook for prevention and training for Echinococciasis". We organized experts to formulate "the program for drug treating for Echinococciasis" and initiated the trial location for the prevention and treatment of multilocularis echinococcosis in the epidemic regions in Ningxia Province and the trial for the prevention and treatment of echinococcosis in Shiqu, Sichuan Province. We strengthened the supervision, and supervised and checked many aspects such as the organization and administration, item fund, the purchase and targeting of machines and medicines, training, program and plan for the specific operation, the results of basic investigation, the implementing of treating patients and prevention measurement during the prevention and treatment of Echinococciasis in Neimenggu, Xinjiang and Qinghai Province for the prevention and treatment of Echinococciasis and summarized and exchanged the experience on the prevention and treatment of Echinococciasis.

1.3.4 The subsequent work for the elimination of Filariasis

Achieving the goal of the elimination of Filariasis is a milestone in the prevention and treatment of parasitic diseases in China, but the surveillance and cares for chronic patients after the elimination of Filariasis cannot be ignored. We insisted on daily checking and detecting every case of Filariasis reported through network. We carried out technical training and supervision on cares for chronic patients in different areas. We supervised and investigated the organization and administration, operation, effect, inspection and examination on cares for

chronic patients in Zhejiang, Guizhou and Chongqing.

"The criteria for the Filariasis elimination" was given the third prize of 2007 Chinese criteria innovation and contribution.

1.3.5 Carrying out training and trial and strengthening the technical storage for the prevention and treatment of Kala-azar

In order to speed up upgrading the technical level and training of professional staff, our institute initiated the trial for the prevention and treatment of Kala-azar in Gansu, and it was to evaluate the effect of dogs' wearing necklaces which were soaked in deltamethrin. We held the technical training classes for the prevention and treatment of Kala-azarin in Gansu and Xinjiang Province separately, which promoted the development of local prevention and treatment.

1.3.6 Exploring the new methods for the prevention and treatment of vectors

At the request of the Bureau for Disease Control, Ministry of Health, our institute carried out the investigation on host diffusion and transmission function of *Angiostrongylus cantonensis* in nine point provinces in south of China. We also investigated the distribution of the intermediate host and definitive host and the infection state, and collected and preserved the species of host and worm. We primarily sorted and finished the investigation report on epidemic focus of *Angiostrongylus cantonensis* and the collection of data, which was the first time in China.

We organized experts to investigate the epidemiology of Kala-azar, sand fly and animal host in Ruoqiang and Minfeng, Xinjiang province, where there were patients, skeptical patients of Kala-azar, or indefinite epidemic, and to test in field the effect of inducing mosquitoes of various lights and agents

In addition, in order to offer technical supports for snail control, we carried out the snail collection and investigation in those places where the snail reappeared. To understand the vector population distribution in the boundary of China and Burma and improve the methods for mosquitoes surveillance, we held the distribution investigation of anopheles in Yunnan , the investigating training class for national parasitic disease vectors in Zhengzhou, Henan Province, the training class for expanding the new skills for snail control and elimination in Jinan, Shandong Province, and finished the training materials such as "the investigation and elimination of snail" and "the courseware for snail control".

1.4 Responsing quickly and strengthening the competence to solve the outbreak of epidemic situation

In this year, outbreaks of parasitic diseases were accounted for 3 times, including the sudden outbreak of malaria in Congjiang, Guizhou Province, the concentrated outbreak of malaria in Shangrao, Jiangxi Province, and the epidemic situation of remaining filariasis in Fuchuan, Guangxi Province. After the outbreak, our experts replied actively and responded in time, and finished the investigation of epidemic area in short time, and applied effective control measurements, which demonstrated that our experts had great ability and sensitivity to outbreak

events

Our institute was praised by Ministry of Health and Chinese CDC, for our proper measurements of dealing with the sudden outbreak of malaria in Congjiang, Guizhou and the epidemic situation of filariasis in Fuchuan, Guangxi Province. During the process of dealing with the filariasis remaining epidemic points, we were given a high evaluation from WHO.

2 Strengthening scientific research and construction of key laboratory

The first-class disease control depends on the first-class scientific research, which promotes the level of disease control. Around the demands of prevention and control on important parasitic diseases, we carried out domestic and international cooperation to tackle key problems on the subject frontier in order to provide technical support to response and disposition of parasitic diseases outbreaks and emergent public health affairs and simultaneously cultivate a group of high-level professional talents.

2.1 The performance of the projects and the situation of application

A total of 26 research projects were undertaken in 2007, among which one project was supported by 863 Program (the National High Technology Research and Development Program of China), one by the National Program for Sci-Tech Basic Conditions Platform, one by the Program for Scientific Research Conditions of MOST, two by Scientific Research Special Funds for Research Projects Aimed at Public Welfare, one by the Major Program of the National Natural Science Foundation of China, 3 by the General Program of the National Natural Science Foundation of China (including the project we participated in), one by the Program for AIDS Prenvention and Control of MOH (which we participated in), 3 by Science and Technology Committee of Shanghai Municipal Government, 6 were in collaboration with international communities, 2 were supported by IPD Youth Foundation and 2 were horizontal subjects. A total of 7 million Yuan was appropriated for the research projects.

The professionals of IPD applied 16 new projects in 2007, among which 11 projects were approved and two were supported by the National Natural Science Foundation of China, one by the National Science & Technology Pillar Program and one by the Program for Germplasm Resources Platform of MOST. A total of 12.7 million Yuan was funded.

We organized personnel to write 3 proposals for establishment of key research areas and technologies during the 11th Five-year. We applied two projects of Shanghai municipal funds. According to "Three-year Plans for Strengthening Shanghai's Public Health System Construction", we organized relative experts to write the Application for Construction of Key Subjects in Public Health——Medical Parasitology and Prevention and Control of Parasitosis. 2.2 Achievement and publication

The two subjects "Study on epidemic potential and control strategy for malaria outbreaks in *Anopheles anthropopugus* Areas" and "Impact of eco-environmental changes on transmission of schistosomiasis and relevant interventions" were awarded the second prizes of the Chinese Association of Prevention Medicine Sciences and Technology Award and the second and the

third prize of the Chinese Medical Sciences and Technology Award respectively. The two subjects "Study on Gene Engineering Vaccine against Male-Female Worm Pairing of Schistosome" and "Pharmacological and Pharmacodynamic Study on New Broad-spectrum Insecticide 9901" were approved.

"Cloning Methods and Application of Thioredoxin Gene in *Schistosoma Japonicum* (Chinese strain)" and "A Pharmaceutic Compoud and Its Insecticidal Effects" were applied as patents and approved in 2007. Last year there were 63 papers published on domestic and international journals, among which 15 papers were published on SCI journals.

Because of the Researcher Hu Wei's excellent performance and outstanding contribution in scientific research, she was commended and rewarded China Youth Female Scientists Award by All-China Women's Federation, China Association for Science and Technology, Chinese National Commission For United Nations Educational, Scientific and Cultural Organization and the L'Oréal Group.

2.3 The new breakthrough in construction of scientific research platform, promoting the academic communication.

After earnest organization and careful preparation, Key Laboratory of Parasite and Vector Biology, MOH affiliated to IPD passed the evaluation organized by MOH and ranked 5th in the evaluation of 50 key laboratories. Therefore, it was praised by the Science and Education Department of MOH.

We established Open Fund of Key Laboratory of Parasite and Vector Biology, MOH. Through public bidding, two projects were funded with 100 thousand Yuan. Thus, we provided the platform to promote science and technology progress in relative areas and cultivate talents.

In order to eliminate the bottlenecks in the technology of prevention and control on the spot promptly, IPD organized studies on the projects of parasite species resources platform, schistosomiasis diagnostic reagents assessment platform and drug screening platform for schistosomiasis, which prepared the technology reservoir for the field application.

Taking advantage of the opportunity of holding national training course, we propagandized the published parasitic disease standards positively and improved the specialists' understanding level to the standards. The Professional Standards Committee of Parasitosis affiliated to IPD passed the evaluation of MOH smoothly.

Our institute should continue to strengthen communication and cooperation with WHO, and we also play an important role as a WHO malaria, schistosomiasis and filariasis cooperation centre. We actively apply three projects to the WHO and other institutions in this year, two of which have been approved.

To imply the spirit of the speech by General Secretary Hu Jin-tao at the China-Africa Forum in 2006, to imply China's commitments to African countries, to help developing countries to train qualified personnel, as a request of the Ministry of Commerce, We have sent several groups of experts to African for building malaria prevention and control centre ; we held

"African infectious disease control and prevention training classes" and "Malaria, schistosomiasis control and treatment training course for developing countries". 88 state officials including 37 countries (Africa, Asia, South America, Europe, etc.) participated in the course. Both training classes achieved completely success. We also hosted the "international meeting on malaria prevention and treatment", "evaluation training course for burden of parasitic disease and 7th work conference for Asia schistosomiasis and an important worm's network" and "seminar for tropical diseases research" and other important international exchanges and to show image as the international parasitic disease prevention and national research team.

In 2007, IPD received 179 foreign visitors in 18 groups. And there were 26 of our experts in 24 groups to go abroad.

3 Improving human resource system and personnel training

We set up a leading group for the human resources work, and work out "development plan and implementation methods for the human resources of IPD", through the individual application, the department recommended test, written test, the group interview, evaluation, secret ballot, and other procedures, and through IPD Work Leading Group consideration, publicity, 16 comrades were listed as professionals trained, and they signed "Training Agreement" with IPD. This agreement list their work during training period, as well as promised the financial support, mature assessment indicators and liability for breach of contract ,and so on.

According to the State Council selecting demand of the schistosomiasis staff for control and treatment and the human resources development plan of IPD, we selected personnel to have a temporary post. After a certain procedure, five professional and technical staffs were sent to schistosomiasis control connecting location in five provinces such as Hu bei for an eight-month training technical support and testing work. In selection, we paid attention to ideological and political work, gave care and helped comrades who has difficulties in the life, made work completed more smoothly.

To promote and deepen the reform of the personnel system, improving the management of employment, according to the "China Disease Prevention and Control Center post settings and the employment program", through the research and statistics, setting the implementation details, in the spirit of open, fair and justice, we carried out the post-setting work, after a series of procedures , following accordance with the provisions of the Centre, signed employment contracts, according to the employment status, gave the corresponding wages. All of the new employees were hired after the completion of rotation excise.

4 Strengthening training work and the building of meaning

In order to strengthen job training, we organized 18 training classes including the "snail control technology and promotion of new eradication of snailstechnologies", "parasitic disease diagnosis technical training" and "national medium survey course" and so on. The number of participants was 1325, and though these course, staffs were raised a level of professional

standards.

We organized related staffs to participate in training classes, seminars, e-learning and on-site practice, and selected more than 20 people to study, exchanges, and training abroad.

5 Advance in creating civilized units, enhancing the construction of a civilized units to a new level

Regarded the building of spiritual civilization as the starting point, and further deepening the social ethics, professional ethics, education, strengthening cultural construction, and carring forward the hard work, dedication and enterprising spirit in disease control, IPD launched the series of activities of "In memory of professor Mao shou-bai, to promote hard, rigorous, dedication spirit" to promote the professor's Mao shoubai rigorous scholarship and dedication to the spirit of science. On the basis of improving internal management rules and regulations ,we launched activity of publicity regulations for a month, and intensified the implementation and the examination, after the concerted efforts of all staffs, IPD was awarded by Shanghai health systems, Health Bureau civilized units (has been for 20 years of 10grade), the Shanghai public security units and safely qualified security units again. Our units laid a good foundation of the creation of the Shanghai civilization and IPD civilized construction to a new level.

6 Rounding the work of the centre, accomplishing other tasks

6.1 The 4th clinical evaluation on Tribendimidine has been successfully completed, and further clinical trials confirmed its effect and safety. Tribendimidine treatment on cattle, sheep intestinal parasitic infection will completed at the end of the year. IPD was preparing for the international registration of the work in order to have an independent national intellectual property rights and patent of this new drug to benefit to the people.

6.2 "Environment Optimization", "Workers' Home" and other infrastructure projects were completed, as well as the comprehensive renovation and refurbishment of the main road to the road surface and drainage channels. thus further improve the environment for creating a good atmosphere for work and study, and striving qualified "Worker Home" to improve the facilities. Three renovation infrastructure projects including Arbovirus acute infectious diseases laboratory, etc. passed the works accounts for audit, using standardized and received positive reputation.

6.3 The digital management system and a preliminary books, periodicals directory databases, were established in library electronic borrow card replaced. the staff's software training, and the library bibliographic electronic management were completed; 343 new books and 46 foreign-language books, including edge, cross-discipline academic were books purchase, with addition of five kinds of original journals , and more than 500 volumes of rare and old books got repaired.

"China parasites and Parasitic Diseases magazine" which was edited and published by IPD was awarded the first prize of Chinese Journal of Preventive Medicine Council.

6.4 To strengthen "one Museum two warehouse" building, were pathogenic parasites in the media specimen storage space and the number of storage pest species expanded. Collecting rare

specimens of parasites and packing parasite specimens' storage, with establishment of computer input sample database, and adding vivid visual images were completed. Human parasites and the media Museum received 420 visiting guests from China and aboard.

6.5 Logistics management and state assets management were strengthened; the inventory of state-owned assets were complete. By the end of 2007, the fixed assets were amounted to 3424 million Yuan. "national public health emergency response system second phase of construction equipment configuration" successfully was complete. We also inspected equipment, installed and tested work, and now most of the equipments have been put into use. Through the open tender procedure, five of 17 strokes tender units were selected. 13 major categories 27 (Tai), the total 1.76 million Yuan earmarked equipment purchase was completed in 2007.

Although our achievement did not come easily, we still face an arduous task of parasitic diseases control and treatment at present. increasing trend of some parasitic diseases has not yet been effectively controlled, we should take a proactive attitude by encouraged of the spirit of the party's 17th session of the General deputies Assembly, work for the same aim, forge ahead, and promote a down-to-earth work style and firmly establish a scientific concept of development, make an unremitting efforts to promote the prevention and treatment of parasitic diseases.

WORK PLAN IN 2008

The Spirit of 17th CPC National Congress is comprehensively implemented in 2008, when IPD is standing at a new starting point to realize a new leap. We should conscientiously study the Spirit of 17th CPC National Congress and the important thought of Three Represents, profoundly understand the scientific connotation, the spiritual essence and the fundamental requirements of the Scientific Outlook on Development, work together, forge ahead with determination and stay realistic and pragmatic with the spirit of reform and innovation so as to strengthen construction of a harmonious IPD. By striving to improve disease control and the level of scientific research, putting people first, strengthening group contruction and talent training, taking people in heart, we will promote prevention and control of parasitic diseases.

The main tasks of 2008 are as follows.

1 To actively promote the overall implementation of prevention and control of parasitic diseases

According to the spirit of the documents including "the Outline of National Plan for Medium to Long-term in prevention and control of schistosomiasis ", "National Malaria Control Program" and "National Program for prevention and treatment of Priority Parasitic Disease ", etc, we should base on the field, fan out from point to area, take advantage of experts to play our strengths and concentrate all forces of IPD mainly on the following works.

1.1 Schistosomiasis Prevention and Control

According to the requirements of "national key project plan for schistosomiasis integrate

treatment(2004-2008)", we will cooperate with the Ministry of Health to carry out standards assessment and project appraisal. We will carry out the "Schistosomiasis Control Ordinance" assessment. Combining with the cultivation and training of young outstanding people, we will continue to provide State Department stationed contact spots technical support to actively promote integrated treatment strategy focusing on source of infection control and implemente various measures.

We will complete routine national schistosomiasis monitoring, epidemic analysis, as well as all types of technical guidance and supervision, continue to organize and implement pilot work of National Health Education on schistosomiasis, actively construct drug screening platform for schistosomiasis and schistosomiasis diagnostic reagents assessment platform, accelerate information management process, conduct the application dominated field studies on the schistosomiasis prevention and control, and reinforce training of primary professionals for schistosomiasis control.

1.2 Malaria Prevention and Control

We will actively pay attention to the direct network reporting, analyze Weekly Epidemiological Record to master the dynamic changes of national epidemic trend. We are going to adjust the national malaria monitoring programs, carry out related training and strengthen technical support and supervision to malaria prevention and control in the heavily endemic provinces and autonomous regions. We will also provide African-aid Malaria Control Center personnel training and technical guidance, complete aid Africa training tasks arranged by Ministry of Commerce or Ministry of Health, strengthen health education advocacy on malaria prevention and control for floating population and continue to strengthen support for malaria control in Tibet. We will do our best to successfully complete the first round of the Global Fund malaria project, implement and manage the fifth round of malaria project and actively apply for a new round of malaria projects.

1.3 Other parasitic diseases

We will strengthen quality control and evaluation to promote the work in the national parasitic diseases integrated control demonstration areas, continue to do well follow-up monitor after elimination of filariasis in China, strengthen technical support, training and supervision of the central transfer payments hydatid disease prevention and control pilot project, explore pilot kala-azar prevention and control experience in the investigation and prevention of leishmaniasis vectors, formulate key parasitic disease control standards in conjunction with the "national plan in prevention and control of priority parasitic diseases" and endeavor to monitor soil-transmitted nematodes.

1.4 To strengthen our own ability construction to improve the ability of responding quickly to and dealing with emergent public health affairs

We will strengthen technical reserve in parasitic disease pathogens and vectors identification, epidemiology and prevention and control strategies and measures, etc. We will

also reinforce disease control system, mechanism and group construction, especially the management of plan, budget, system and disease prevention and control projects. In order to respond effectively to and deal with various types of parasitic diseases outbreaks, we will promote response and disposition of emergent public health affairs mechanism construction. We will make great efforts to complete various tasks assigned by Ministry of Health and China CDC.

2 To enhance the quality management of research projects and laboratories

2.1 To actively strive for scientific research projects and international cooperation projects to promote academic exchanges

On the basis of conscientious management of the projects in process, we should organize scientific and technological personnel to actively apply for national, the ministries and commissions and Shanghai's related programs of 2008, in particular 973 Program (The National Basic Research Program), the National Key Project of Scientific and Technical Supporting Programs Funded by Ministry of Science & Technology of China for the 11th Five-year Plan, the National Natural Science Foundation, profession scientific research special funds for research projects aimed at public welfare in health industry and international cooperation projects. We should also apply for the Chinese Medical Sciences and Technology Award, the Chinese Association of Prevention Medicine Sciences and Technology Award and national-level awards positively.

We are going to further strengthen the construction of the information platform of parasitic diseases, the technology platform of research on anti-parasitic drugs, the resource platform of main parasite vectors and the platform of diagnostic technology for parasitic diseases.

We should carry out the academic exchange activities regularly. We will actively invite domestic and overseas renowned scholars to give lectures in IPD to constantly expand the content and scopes of academic exchanges, to broaden the horizons of scientific and technological personnel and to advance the academic levels of them.

Over the years, IPD have successfully completed the tasks of holding various international conferences and training courses assigned by WHO and the Ministry of Commerce and have played the role of WHO Collaborating Center of Malaria, Schistosomiasis, Filariasis (to provide experts to participate in policy formulation, technical guidance, network coordination), and in 2008 we will continue to undertake various international conferences and courses assigned by WHO and the Ministry of Commerce to further expand and enhance international cooperation. 2.2 To further strengthen laboratory biosafety management and capacity building

We will further strengthen the management of the laboratory biosafety to ensure the laboratory biosafety and the safety in production. We will strengthen the construction and management of key laboratory of Parasite and Vector Biology, MOH and enhance opening, floating and competitive intensity. In accordance with the relevant requirements, we should prepare for key laboratory accreditation and application for project establishment of state key laboratory.

According to " the Second Phase of National Public Health Emergency Response System Construction, Instrument and Equipment Disposition", we should make great efforts to complete equipment inspection, installation and adjustment. We will actively strive for project establishment of purchase of equipment and strive to improve the equipment conditions IPD. 2.3 To further intensify personnel training and examination

We should firmly establish the concept of "human resource is the primary resource". On the basis of experiences, according to " Development Plan and Implementation Methods of Human Resource in IPD", we will organize a selection of some people as cultivation objects of high-level talented people, scarce talented people and outstanding young talented people in 2008. We should inspire the capabable people more actively and provide enterprise stages for those who are eager to perform and further reinforce the inspiration and evaluation efforts for outstanding talents.

3 To accomplish other tasks around the working center in IPD

3.1 In order to further improve editorial quality and academic standards of "China parasites and Parasitic Diseases magazine" and "International Journal of Medical Parasitology", we will track domestic and overseas significant fund projects, such as the National Natural Science Foundation, the key projects of national "tenth five-year plan", 863 Program (the National High Technology Research and Development Program of China), 973 Program (The National Basic Research Program) and other international financing projects, actively solicit contributions and provide "green channel" for excellent papers of significant science and technology projects.

3.2 Based on the study on the feasibility of 15-storey building we will determine whether building No.1 should be reconstructed or restored. In order to further improve the environment in IPD, we will implement planting reformation project including application and management.

3.3 We should make greater efforts on scientific and technological development. We should also take care of employees' life and increase payment of them. We will improve working environment and working conditions.

3.4 We should conscientiously fulfill the payment of the retired workers' housing allowance. We should actively promote and implement the payment of accommodation subsidies to people who were employees after 2000.

3.5 In strict accordance with "Diseases Control Projects Management Measures of IPD", we should strengthen management including standardizing implementation and management of all kinds of diseases prevention and control projects to ensure the success accomplishment of those projects.

3.6 We should continue to construct IPD as a role model and create conditions to construct a civilized, and tidy, harmonious, orderly, and prosperous institution of parasitic disease to actively apply for Shanghai role model in ethical and cultural progress.

We are facing more arduous tasks but also the important opportunities of the development

of career. We should regard the Spirit of 17th CPC National Congress as guidelines, firmly establish the Scientific Outlook on Development, seize the opportunity and meet the challenge bravely, make persistent and great efforts to complete each work in a more uplifting, energic spirit with the purpose of protecting the health of people and contributing to the building of a harmonious society.

§ 2. 疾病控制

2007 年寄生虫病所较好地完成了年初制定的各项工作目标。现将我所 2007 年的疾控工作总结如下:

1 血吸虫病防治

1.1 全面推动全国血吸虫病综合治理

开展了联系点的驻点挂职工作、疫情达标预评估、病人数推算、综合治理项目指导以 及相关调查等。

1.2 加强技术支持,积极开展督导与调研

组织专家参加了《血吸虫病防治条例》宣讲、四川等省督导和调研、多省水利血防工 程论证、协同 WHO 官员现场督导和调研等。

1.3 积极探索全国血吸虫病健康教育试点工作

继续推动血吸虫病健康教育试点的开展;编制了《血防健教评估方案》、《健教试点考 核评估方案》和健康教育评价题库。

1.4 加强学术交流与培训、开展平台研究, 增强技术储备

召开大型会议及培训班 10 余次,如"WHO/TDR 血吸虫病诊断工作会议"、"首届地理空间卫生学国际学术会议"、"山丘地区血吸虫病防治策略"培训班等;开展了血吸虫病平台项目的应用性研究。

1.5 完成血吸虫病监测

完成血吸虫病监测工作任务,完成急感周报分析和编制,发放监测试剂、器材,对诊 断检测试剂进行了中期评估,出版印刷了监测工作论文集等。

2 疟疾防治

2.1 继续开展全国疟疾疫情监测工作

召开了全国疟疾监测工作会议;制作并下发了抗原片和药品抗性测定板;修订和完善了现行监测方案;完成了WHO 疟疾疫情报表和疟疾疫情周报;协助卫生部修订了疟疾防治 年度报表。

2.2 加强技术支持, 遏制平原地区疟疾疫情回升态势

开展了在安徽省的驻点工作;督导和评估了春季休止期强化行动并进行驻点;协调抗 疟药品的生产和供应;开展了重点地区的媒介调查及防治试点工作。

2.3 援非、援藏疟疾防治技术支持

开展了西藏地区驻点工作及媒介专项调查;配合商务部和卫生部赴非洲现场考察了援 建抗疟中心的需求并编制了培训教材。

2.4 结合现场防治,积极开展技术支持和培训

召开了"全国疟疾防治技术方案培训班";评估了重点省的镜检技术能力;督导了贵 州省的基线调查工作;修订了疟疾技术方案、抗疟药物使用原则与用药方案;制订了"疟 疾防治与处理原则";

顺利执行了第一轮和第五轮全球基金项目。

3 其他寄生虫病防治

3.1 认真完成土源性线虫病监测工作

完成了 2007 年监测报告;赴各监测点开展调研并复核了样本;举办了"14 岁以下儿 童蛔虫感染监测"培训班;采购并下发了监测器材。

3.2 总结经验、扩大寄生虫病综合防治示范区示范效应

复核了各示范区粪检样本,督导驱虫活动;组织召开了工作经验交流会;召开了防治 对策研讨会;组织了各示范区的中期考核。

3.3 积极开展包虫病防治项目技术支持和督导

举办了包虫病防治技术培训班和经验交流会;召开了防治手册审稿会;完成了《包虫 病药物治疗方案》,启动了在宁夏等地的防治试点工作;督导了内蒙古等省的包虫病防治 项目。

3.4 消除丝虫病后续工作

对报告的丝虫病病例进行核实和病例侦测,开展了慢性丝虫病病人关怀照料的培训和 督导;完成了消除丝虫病的总结工作。

3.5 积极开展培训和试点,加强黑热病防制技术储备

启动了甘肃的防治试点工作

3.6 积极探索媒介防治工作新方法

完成了我国第一次广州管圆线虫疫源地调查报告和资料汇编;开展了多项专题调查; 完成了《查灭钉螺》、《钉螺控制课件》等教材。

4 快速响应,不断增强突发疫情应急处置能力

处理了突发疫情3起,包括广西丝虫病残存疫点处理,贵州疟疾突发疫情、江西疟疾 爆发疫情处理,使其在较短的时间内得到了有效控制。

5 强化管理,合理配置,逐步加强防治项目执行能力建设

开发了疾病预防控制项目管理系统。
§2. DISEASE CONTROL

According to the goal drafted in the beginning of 2007, all of the control programs were successfully performed.

1. Schistosomiasis

1.1 Promoting the national program for comprehensive control of schistosomiasis

According to the program of comprehensive control of schistosomiasis, authorized by the Ministry of Health, 5 young technicians were dispatched to take a temporary post in endemic counties for technical support. The pre-evaluation on the achievement of the criteria for control and elimination of schistosomiasis was fulfilled and the project of estimation on number of patients in epidemic areas was drafted.

1.2 Strengthening technical support

Under the leadership of the Ministry of Health, the ordinance of schistosomiasis control was publicized. Demonstrations on the feasibility of water conservancy constructions concerning schistosomiasis transmission were carried out in endemic provinces of Sichuan, Hubei and Anhui. Accompanying with WHO officials, the progress of control programs were inspected in Jiangxi and Yunnan province.

1.3 Exploring the strategy of national program for health education in pilot plots

Pilot plots for health education in epidemic provinces were set up by our institute to explore an effective way to prevent acute schistosomiasis. Totally two protocols were drafted out to evaluate the effect of health education in pilot plots. Furthermore, a question-base on health education for effect assessment was developed.

1.4 Enhancing academic exchange and technical guidance, developing platform establishment and reinforcing technical reserves

Totally, more than 10 conferences or training programs were performed; for instance, WHO/TDR conference on schistosomiasis diagnosis, the first International Symposium on Geospatial Health and strategic training course on schistosomiasis control in hilly areas, etc. In order to solve the technological difficulties, a platform on the application studies on schistosomiasis control was developed in our institute.

1.5 Fulfilling the annual program for schistosomiasis surveillance

For schistosomiasis surveillance, weekly reports on acute cases were compiled and analyzed. Equipments for schistosomiasis surveillance were distributed to national surveillance spots. A medium evaluation on diagnostic reagents was carried out and collected papers of surveillance were issued.

2. Malaria

2.1 Continuing to perform the national surveillance program for malaria situation

The national conference on malaria surveillance was held. Antigen slides and determination

slabs for drug resistance were distributed to the national surveillance spots. Weekly reports were finished and the tendency of malaria epidemic situation was predicted. Assisting with the Ministry of Health, the current surveillance program and the annual report on malaria control and WHO epidemic reports were amended.

2.2 Strengthening technical support to prevent malaria relapse in plain areas

A tempering program was implemented in Anhui province to carry out intensified activities to help malaria control during transmission interregnum in spring. In order to ensure anti-malaria drug supply, our institute associated with the manufactories to provide plentiful drugs. Additionally, special investigations on vectors in key areas and trial programs were carried out. 2.3 Technical support in Africa and Tibet

Technicians and specialists were designated to stay in Tibet for vectors investigations. Assisting with MOH and MOC, the requirements for establishing anti-malaria centres in Africa were investigated and malaria training proceedings were compiled.

2.4 Technical support and training

A technical training program on national malaria control was carried out. The capacities of examining by microscope in key provinces were evaluated. The base-line survey of epidemic situation in Guizhou was carried out. Technical projects for malaria control and drug treatment were amended. The guidance of malaria control was drafted out.

Projects of both the first and fifth round global fund were smoothly conducted.

3. Other parasitic diseases

3.1 Fulfilling the national surveillance program of soil-borne nematodes

According to the national surveillance program, the surveillance report in 2007 was com]pleted and feces samples were re-examined. Investigations on program executing were conducted. A training course on ascarid infection surveillance for children below 14 years old was performed and the equipments for the national surveillance were distributed to surveillance plots.

3.2 Expending the effect of national program for demonstration sites of parasitic diseases control

Feces samples from demonstration sites were re-detected and medical treatment were inspected by professional. To assist with China CDC, totally two meetings on experience exchange and control strategies were held. The medium-term effect evaluation in demonstration sites was carried out.

3.3 Technical support and supervision

Several meetings were held on experience exchanging, technical support on echinococcosis control, etc. The Treatment Protocol for Echinococcosis was formulated, a control program in pilot plots in Ninxia and other provinces was initiated and the execution of programs in Inner Mongolia and other provinces were inspected.

3.4 Further work after elimination of filariasis

Reported filariasis cases were re-checked and controlled, program of caring for chronic

patients were conducted and the elimination of filariasis was summarized.

3.5 Conducting technical training and the program for control in trial spots and enhancing technical reserves

The control of leishmaniasis in a pilot spot in Gansu Province was launched.

3.6 Exploring new approaches to control vectors of parasitic diseases

The first national report and compilation of investigation on epidemic foci of angiostrongylus cantonenesis were formulated in Guangzhou province. Many special investigations were conducted and training courseware were developed including detection and elimination of snails and snail control.

4. Enhancing the capacity of emergency response

A total of three emergencies were quickly responded and effectively controlled in short time including residual infectious foci of filariasis in Guangxi, two sudden epidemics of malaria in Guizhou and Jiangxi province.

5. Strengthening administration and execution of control programs gradually

An administrative system of disease control programs was developed in our institute.

§3. 科研工作与外事工作

1 科研工作

1.1 在研课题

2007 年在研课题共计 27 项,其中 "863" 1 项,国家科技基础条件平台工作 1 项,科 技部科研条件工作 1 项,科研院所社会公益研究专项资金 2 项,国家自然科学基金重大项 目 1 项,国家自然科学基金 3 项 (含参加 1 项),卫生部艾滋病防治研究项目 1 项 (参加), 上海市科委项目 3 项,国际合作项目 6 项,所中青年基金 5 项,横向课题 2 项,所启动基 金 1 项 (中止)。在研课题共到位经费 700 万元左右。

2007 年在研课题除个别课题没有按计划进行外,其他的都能按计划实施,进展顺利。 1.2 保种工作

为加强对本所保种课题的规范管理,对全所保种课题建立数据库。

1.3 课题申报

2007 申报课题共计 15 项,其中 "973" 课题 1 项, "863" 课题 2 项,国家自然科学 基金项目 6 项,国家自然科学基金国际(地区)合作交流项目 1 项,"十一五"国家科技 支撑计划重大项目(参加),国家科技部基础性项目 1 项,国家科技基础条件平台科学数 据共享工程—公共卫生科学数据中心课题 1 项(参加),卫生公益性行业科研专项经费 1 项(参加),国际合作项目 2 项。

组织并完成我所卫生行业科研专项项目建议书8项

组织并完成我所 2008—2009 年基础研究重大战略需求

组织完成撰写十一五重点研究领域与关键技术的3个立项建议书:

1)寄生虫病控制适宜技术研发和应用

2)寄生虫病疾病控制基本标准体系的建立

3)不明原因疾病、新发疾病病因的调查研究(隐孢子病)

组织申请上海市地方匹配资金项目2项

1.4 课题立项

2007 年获准课题共计 10 项;其中 "863"项目 1 项、国家自然科学基金 2 项、国家自 然科学基金国际(地区)合作交流项目 1 项、"十一五"国家科技支撑计划重大项目 1 项 (参加)、国家科技基础条件平台科学数据共享工程—公共卫生科学数据中心课题 1 项(参 加),卫生公益性行业科研专项经费 1 项(参加),国际合作项目 2 项。获准经费约 672.5 万

根据《上海市加强公共卫生体系建设三年行动计划》的要求,组织有关专家撰写了公 共卫生重点学科建设——医学寄生虫病学与寄生虫病防治的申请书。

1.4.1 科研成果

组织并完成2007年度中华医学科技奖和中华预防医学科技奖申报工作,申报2项均获中华预防医学科技二等奖,并分别获得中华医学科技二等奖和三等奖。

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1.4.2 获奖项目

1) 嗜人按蚊地区疟疾流行潜势及控制暴发流行的研究(获中华预防医学科技二等奖和中 华医学科技二等奖)

 2) 生态环境变化对血吸虫病流行态势的影响及干预措施研究(获中华预防医学科技二等 奖和中华医学科技三等奖)

通过验收课题3项:

抗血吸虫雌雄虫合抱发育基因工程疫苗的研究(上海市科委"十五"科技攻关重大计划)

② 新型广谱驱虫药 9901 药理、药效学研究(上海市科委生物医药重点科技攻关项目)

- ③ 烟气有害成份生物测试的研究一拟人吸烟的慢性毒性试验(国家烟草专卖局)
- 3) 专利

我所牵头申请专利 2 项。

获得专利 2 项:

——日本血吸虫中国大陆株硫氧还蛋白基因及其克隆表达方法和应用

——一种药用化合物及其驱虫用途获发明专利

4) 论文、论著

在国内、外发表论文 77 篇,其中被 SCI 专业期刊收录的 6 篇。

5) 积极组织卫生部寄生虫病原与媒介生物学重点实验室评估

为配合卫生部对卫生部寄生虫病原与媒介生物学重点实验室评估工作,我所经过认真 组织、精心准备,4月20日顺利通过了由卫生部组织的卫生部寄生虫病原与媒介生物学重 点实验室评估,并获得较高的评价。

设立的卫生部寄生虫病原与媒介生物学重点实验室开放课题基金正式启动,经过招投标,今年资助2个课题,资助经费10万元。该基金的启动,为促进相关领域科技进步和人才培养提供了平台。

1.5 开发

三苯双脒开发工作新进展: 三苯双脒四期临床工作已圆满结束, 今年4月在成都与山 东新华制药股份公司联合举办召开三苯双脒四期临床工作总结会, 三苯双脒四期临床试验 进一步证实三苯双脒对肠道线虫有效和安全。三苯双脒国际注册申请的工作, 经过与瑞士 热带病研究所和美国世界健康公司的联系和讨论, 计划于今年年底或明年年初在上海召开 首次国际合作多边洽谈会议, 进一步讨论三苯双脒国际合作项目的开展。 三苯双脒治疗 牛、羊肠道寄生虫感染试验正在进行中, 预计年底结束。

1.6 生物安全

为加强实验室安全,使全所职工特别是实验室工作人员和研究生牢固树立实验室安全 责任意识,为提高实验室突发事件应急能力,提升应急预案的可行性和科学性,确保我所 实验室安全。组织全所有关人员开展了生物安全实验室演练活动;组织开展了危险化学品 安全等自查工作,制定了实验室化学品登记册,进一步规范其分类存放、保管及领用;进 一步规范实验室废弃物的处理,感染性废弃物(如血清等)先高压灭菌再交由后勤处理; 举办实验室安全周活动等;通过开张生物安全活动,使实验室工作人员的安全意识得到了 进一步加强,我所的实验室安全文化氛围在逐渐形成。

1.7 实验室管理

为规范我所实验室质量管理,确保以公正的行为、科学的手段、正确的结果快速有效 的开展寄生虫病预防控制的实验室工作,及时向社会提供优质服务,满足我所长远业务发 展的需要,我所为明年开展实验室的认证认可工作做了准备

工作。今年内举办实验室认证/认可的讲座;制订了寄生虫病所实验室认证认可工作 计划、寄生虫病所实验室认证认可实施方案等。

2 教育培训工作

2.1 研究生管理工作

2007年共招收研究生7名,其中博士研究生2名。在读研究生共25名,其中博士研究生10名。

今年毕业并获得硕士学位证书的研究生11名,其中博士生2名。

一名博士毕业生被评为 2007 年中国疾病预防控制中心优秀博士学位论文三等奖。

举办了一期"专业寄生虫学与专业英语班",时间为1个月,参加对象为2006级在 读硕士生、2007级在读博士生和新进所的职工共14人。本班采用讲课、实习等形式。在 学习过程中增加了专业寄生虫病、专业英语的考核并加强了专业技能的训练,取得较为满 意的效果。

掌握并应用地理信息系统及遥感技术是现代寄生虫学专业知识更新与发展的重要内容,以研究生为主要对象的青年科技人员专业培训、知识更新为目的,于 2007 年 3 月 8 日~3 月 13 日,举办了"地理信息系统及遥感技术应用培训班",本所相关专业的在读硕士生、博士生和疾病控制专业的部分青年科技人员 23 人参加了培训。本次培训班的培训方式以授课为主,结合软件操作,及交流与讨论。通过讲解与实践,学员们的主要收获为:不同程度地加深理解了 GIS 和 RS 的理论知识,增强了应用 GIS 和 RS 知识及操作 3 个软件的能力。通过本次地理信息系统及遥感技术系统的基础培训,为学员们今后结合寄生虫病防治与科研应用奠定了重要的基础。作为一个知识更新为目的计划,于 2007 年 10 月 12 日进行了一个小型的学术交流会,相关的研究生及年青的科技人员就地理信息系统及遥感技术开展的研究工作进行了交流,对于存在的问题及遇到的难题得到了专业技术人员的指导,起到了较好的效果。

2 名流行病与卫生统计学专业的博士后于 9 月份进站,其中一名博士后完成申请了中国博士后基金科学基金面上资助项目。

完成制定本所 2008 年硕士、博士生招收计划。

2.2 培训工作

2.2.1 进修:

本年度接受安徽省疾病预防控制中心来所进修生5名,时间为1月,进修了与疟疾相关的分子生物学技术、蚊媒监测和检测技术、IFA法诊断技术、快速诊断技术及GIS(地理信息系统)分析技术等;

受中组部、卫生部委托接受贵州省疾病预防控制中心技术骨干在挂靠我所的卫生部寄 生虫病原与媒介生物学重点实验室进修,时间为一年,学习人源隐孢子虫的分离、鉴定及 32 分子生物学研究,在指导老师指导下,预期通过一年的进修,基本能独立进行科学研究工作,包括文献阅读、选题和课题设计、课题方案的实施、常规分子生物学技术和生物信息 学方法的掌握、论文撰写等。

天津疾病预防控制中心2名专业技术人员完成在本所土源性食源性寄生虫病室进修任务,达到预期目标。

澳门国家卫生局叶嘉明在我所进修时间,学习了相关寄生虫病原学的检测技术及虫卵 的鉴定等方法,期间与我所的科技人员进行了学术交流,并介绍了澳门寄生虫病相关部门 的情况及开展的寄生虫方面的工作等。

接受高等院校本科及研究生实习及完成学位课题共5名。

2.2.2 继续教育项目:

2007年完成申报 2008年国家继续教育项目 6 项及中华预防医学会继续教育项目 2 项。 至今完成本年度举办继续教育项目共 9 项,均取得较为满意的结果。

在职职工参加学历学习及业务培训共40人次。

3 国际合作与交流

3.1 国际交往

来访: 接待外宾 18 批, 179 人次, 分别来自日本、加拿大、美国、瑞士、吉布提、安 哥拉、喀麦隆、桑给巴尔、津巴布韦、塞内加尔、贝宁、利比里亚、多哥、埃塞俄比亚、 厄立特里亚、加纳、赞比亚、布隆迪、尼日利亚、几内亚、乌干达、卢旺达、坦桑尼亚、 尼日尔、塞拉利昂、塞舌尔、刚果(金)、澳大利亚、菲律宾、智利、比利时、马维拉、 马里、英国、柬埔寨、丹麦、印尼、意大利、韩国、老挝、缅甸、瑞典、泰国、越南、WHO、 WPRO、肯尼亚、巴巴多斯、约旦、也门、巴基斯坦、厄瓜多尔、尼泊尔、东蒂汶、摩尔多 瓦、朝鲜等 46 多个国家、地区。

出访:全年出访 24 批,26 人次。分赴英国、美国、法国、澳大利亚、瑞士、瑞典、 日本、韩国、泰国、马来西亚、越南、柬埔寨、坦桑尼亚、安哥拉、肯尼亚、阿曼等 17 个国家、地区。

3.2 举办国际专业培训班

我所于 2007 年 6 月 12 日至 7 月 1 日承办了由商务部主办的"非洲国家传染病防治研修班"。来自非洲 22 个国家的 39 名官员参加了培训。本次研修班达到了预期目标,取得得了圆满成功。来自坦桑尼亚的 KHADUDU 博士在结业式上说:"我们感谢你们组织和举办了这次培训,这是一个学习和增长知识的殿堂。我们来之以前被划分为不同殖民地的非洲国家。今天通过这次培训我们走到了一起。我们不仅会和中华人民共和国建立长远亲密的友谊,而且我们非洲人之间也将团结在一起"。

由我所举办的"寄生虫病疾病负担评价培训班及亚洲血吸虫病及重要蠕虫病网络第 七次工作会议"于9月5日-7日在云南丽江召开。来自20多个国家和国际组织近120名 代表参加此次会议,50余名与会代表参加了寄生虫病疾病负担评价培训班,达到预期目标, 取得了圆满成功。

由寄生虫病所、中华预防医学会医学寄生虫分会和上海市寄生虫学会共同举办的"热带病研究方向研讨会"于 10 月 25 日在本所召开,出席代表共 35 人。世界卫生组织 TDR

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主任 Robert Rldiey 博士报告了 TDR 今后 10 年的新策略与工作重点,研讨了我国热带病的研究需求与重点,提出了与 TDR 合作的方向。

由商务部主办我所承办的"发展中国家疟疾、血吸虫病防治研修班"于10月17日-11 月5日在上海举办,来自非洲、亚洲、南美洲等25个国家49名学员参加。本次研修班达 到了预期目标,取得了圆满成功。

4 标准工作

4.1 标准宣教

利用举办全国培训班的机会,积极宣传已颁布的寄生虫病标准,提高了专业人员对标 准的了解水平。

在 2007 年 5 月 18-24 日在安徽省马鞍山市举办的全国血吸虫病综合治理重点省、市 血防办主任、血防所所长培训班上,向来自全国 13 个省(市、区)主管血防的行政领导、 业务所长和业务骨干等 112 人介绍《血吸虫病控制和消灭标准》和《血吸虫病诊断标准》。

在 2007 年 5 月 28-30 日在广西南宁召开了的《疟疾防治技术方案》培训班上,向全国 26 个省卫生厅、疾控中心或寄研所疟疾防治工作的负责人和专业人员共 70 多人讲解《疟疾诊断标准》和《疟疾控制与消除标准(报批稿)》。

为促进消除丝虫病后监测工作,在2007年5月15-19日在江苏无锡举办的"消除丝 虫病后监测、慢性丝虫病关怀照料技术培训和经验交流研讨会"上,向参加培训和研讨会 的来自全国 16 个有关省(自治区、直辖市)疾病预防控制中心(寄生虫病所)的代表共 45人,介绍《丝虫病消除标准》。

在 2007 年 5 月举办的两期卫生部包虫病防治技术培训班上,对来自内蒙、宁夏、甘 肃、青海、新疆以及四川省的 31 个包虫病防治项目县的 112 名疾控和卫生管理人员进行 了包虫病的诊断标准的培训。

4.2 标准委员会评估

为进一步加强卫生标准管理工作,充分发挥卫生标准委员会及相关管理机构的作用, 卫生部卫生标准外评估组于 2007 年 5 月 22 日对挂靠在我所的"卫生部寄生虫病标准专业 委员会"进行了评估。评估的内容涉及 1.委员会工作启动情况(有关标准管理文件学习 及自身工作制度建设); 2.秘书处人员配备情况; 3.挂靠单位对专业委员会办公用房、 资金支持情况。

4.3 获奖

《丝虫病消除标准》获得由中国国家标准化管理委员会颁发的 2007 年度"中国标准 创新贡献奖"三等奖。

4.4 今后工作计划

评估组通过采取听取汇报、现场检查等方式实地考察秘书处档案管理、标准经费管理 和秘书处人员配备以及标准化工作能力和素质、设备配置等情况。

通过检查,专家对检查结果一一进行了反馈,1.对本标准专业委员会的工作给予了肯定,工作做到了细致,规范;2.尽管本标准委员会成立不到半年,各项工作开展地有序,3个相关寄生虫标准正在进行中;3.对挂靠单位领导的重视与关心表示了感谢。

5 学会工作

5.1《中国寄生虫学与寄生虫病杂志》荣获 2005-2006 年度中华预防医学会系列杂志优秀 期刊一等奖。

5.2 组织完成撰写中华预防医学会医学寄生虫分会会史,综述了医学寄生虫分会成立以 来,在中华预防医学会的领导和各职能部门的指导下,在挂靠单位中国疾病预防控制中心 寄生虫病预防控制所的支持下,依靠历届委员会和专业学组及专业学术期刊编委会和编辑 部的努力,并取得各省预防医学会、相关学术团体和有关单位的支持配合,及全国医学寄 生虫学工作者的关心和参与,认真贯彻学会的宗旨和任务,业已顺利完成2次分会委员会 的换届,并在开展学术交流和办好专业学术期刊等各项工作中均取得了一定的成绩。

5.3 根据科协办发计字[2007]27 号文关于开展 2007 年重点工作调查统计的通知要求,完成填报了"2007 年重点工作调查统计报表"。

§3. WORKS ON RESEARCH & EXTERNAL AFFAIRS

1 Research works

1.1 Undertaken projects

A total of 27 research projects were undertaken in 2007, among which 1 was supported by "863" National High-tech Program, 1 by Nature Resource Platform Project from Ministry of Science and Technology,1 by Research Resource Project from Ministry of Science and Technology, 2 by Special Social Commonweal Research Programs, 1 by Key Project from National Natural Science Foundation of China, 3 by National Natural Science Foundation of China (1 for participation), 1 by Research Program for Prevention and Control of AIDS from Ministry of Health (participated), 3 by Committee of Science and Technology of Shanghai, 6 by international collaboration, 5 by Young Foundation of IPD, 1 by Starting Foundation of IPD (suspended), and 2 was in collaborating with fraternal institute at home. A total of 7.0 million Yuan was gained.

All except some projects postponed, were undertaking according to original schedule in the year 2007.

1.2 Works on Preservation of Parasites

To strengthen and standardize the management for the preservation of Parasites, the data-base for them in IPD was established.

1.3 Projects application

A total of 15 projects' proposals were submitted in 2007, among which 1 for "973" National Key Basic Research Program, 2 for "863" National High-tech Program, 6 for National Natural Science Foundation of China, 1 for International Collaboration and Exchange Project from National Natural Science Foundation of China, Scientific Support of "Eleventh Five-year" Key Technologies R&D Special Program (participated), 1 for Basic Project from Ministry of Science and Technology 1 for Project of Scientific Data-Sharing in Nature Resource Platform from Ministry of Science and Technology — project from the Data-Center of China Public Health Science(participated), 1 for Healthy Commonweal Vocational Research Programs(participated) and 2 for international cooperation.

8 suggestion reports of Healthy Vocational Reasearch Programs and 3 project-establishing suggestion reports of Eleventh Five-year key research areas and technologies were fulfilled. The major strategic demands of the basic researches from 2008 to 2009 were finished as well. 1.4 Project-application approved

A total of 10 projects were approved in 2007, among which 1 by "863" National High-tech Program, 2 by National Natural Science Foundation of China, 1 by International Collaboration and Communication Project from National Natural Science Foundation of China, 1 by scientific support of "Eleventh Five-year" Key Technologies R&D Special Program(participated), 1 for 36 project of scientific data -sharing in Nature resource platform project from Ministry of Science and Technology — project from the Data-Center of China Public Health Science(participated), 1 for Healthy Commonweal Vocational Research Programs(participated), and 2 for international cooperation. A total of 6.725 million Yuan was funded for these projects.

1.5 Research outcome

1.5.1 Awards

The studies of Malaria epidemic tendency and outbreak control in *Anopheles anthropophagus* dominating region and "Ecological changes caused effect on schistosomiasis epidemic and intervention study" were both awarded second medal of Chinese Preventive Medical Science & Technology Award. At the same time, they were also received second medal and third medal of Chinese Medical Science & Technology Award, respectively.

1.5.2 Three projects accepted

The following 3 projects, i.e. "Research on engineered vaccine of anti-male-female worm pairing of schistosome ("Tenth Five-year" Science and Technology Committee of Shanghai Municipal Government)", "Study of the pharmacology and pharmacodynamics on a new broad-spectrum insecticide 9901(Biomedical Science and Technology committee of Shanghai Municipal Government)" and "Research of biological tests on harmful composition of tobacoo chronic toxicity study on smoking human "(State Tobacco Monopoly Administration) were checked and accepted.

1.5.3 Patent

Two patents were applied for and the staff in the institute was co-applicant for another 2 patents.

Patents were approved to "Methods and applications about cloning and expression of thioredoxin gene for *Schistosoma japonicum* Chinese strain" and "Study of the pharmacology and pharmacodynamics on a new broad-spectrum insecticide 9901".

1.5.4 Publications

Seventy-six papers were published and 6 of them were embodied by SCI.

1.5.5 Assessment of the Key Lab of Parasitic Pathogen and Vector Biology of MOH

We organized and made careful preparations to assist MOH to assess the Key Lab of Parasitic Pathogen and Vector Biology. And it took placed on April 20, 2007 and obtained a good remark during the assessment.

Open Fund of the Key Lab of Parasitic Pathogen and Vector Biology of MOH was officially launched, after bidding, two projects were financed and 100,000 Yuan was funded this year. The starting of this Fund provided a platform for development of scientific and technological progress and personnel training in the related areas.

1.6 R&D

The 4th clinical evaluation on tribendimidine has been successfully completed, Shandong Xinhua Pharmaceutical Company Limited and our institute held a conference jointly to make a

conclusion in April this year in Chengdu. The 4th clinical trials confirmed the effectiveness and safety of tribendimidine on intestinal nematodes. To contact and discuss with Swiss Tropical Institute and Institute for One World Health, we scheduled the first meeting for international cooperation in multilateral negotiations for the international registration applications of tribendimidine, which proposes to further discuss to carry out the international cooperation projects of tribendimidine at the end of 2007 or early 2008 in Shanghai. The treatment trial of tribendimidine for intestinal parasitic infection on cattle and sheep is underway and is expected to be accomplished by the end of the year.

1.7 Bio-safety

To enhance laboratory safety for the employees, especially for the entire laboratory staff and postgraduates to firmly establish a sense of responsibility for laboratory safety, to strengthen the capacity of dealing with emergency of the paroxysmal accident in laboratories, to upgrade the feasibility and science of emergency rules and ensure laboratories security, all the relevant personnel was organized to make a bio-safety laboratory exercises, to do a self-examination for the safety of dangerous chemicals and so on. At the same time, it was stressed to prepare a registration for laboratory chemicals, to further regulate the classification of storage, safekeeping, and recipients, and further standardize the disposal of laboratory waste, infectious wastes (such as serum, etc.). There was a Laboratory Safety Week held to carry out related activities in order to be aware of laboratory safety in the staff.

1.8 Laboratory Management

To standardize the quality management for laboratory as well as to carry out the laboratory work for the prevention and control of parasitic diseases quickly and effectively, and provide quality services to the community timely to meet the needs of development on the long-term business of IPD and to initiate the preparative task for the certification and accreditation of laboratory next year, a seminar was hold in the institute, and the relating plan and working protocol for accreditation have been completed.

2 Education and training

2.1 Postgraduate management

In the year of 2007, 7 fresh postgraduates were recruited, including 2 doctorial candidates. Up to now, a total of 25 postgraduates have been trained in IPD, of which 10 are doctorial candidates.

In 2007, 11 students graduated from IPD, of which 2 awarded PhD.

The PhD thesis of one PhD student was awarded the third prize by China CDC in 2007.

With the educating method of presentation, practice and social practice, a one-month-long course of parasitology and special English for postgraduate students enrolled in 2006 was held. The PhD students enrolled in 2007 and new staffs, total of 14 persons, attended the course.

Grasp and application of geographical information system (GIS) and remote sensing technology (RS) is an important content, which updates and develops professional knowledge of

modern parasitology. The purpose of the professional training was to update the knowledge of the young scientific and technological personnel mainly for graduate students, . From March 8 to 13, 2007, the training course of "GIS and RS applications" was provided for 23 persons who were the relevant professional postgraduate students and some of young scientists majoring in disease control. The teaching activities include lectures, software operation, exchanges and discussions. With lectures and practice, the participants deepened their theoretical knowledge of GIS and RS at various degrees, enhanced the capabilities of application of GIS and RS and operation of the three soft wares. Through this basic training, an important foundation for combining parasitic disease prevention and control with the scientific application has been laid for the trainees in the future.

Two postdoctorals majoring in epidemics and health statistics joined in our institute in September, of which 1 completed the application for the China Science Foundation postdoctoral surface funded projects.

The enrollment plan for postgraduates will be fulfilled by the 2008.

2.2 Training

2.2.1 Professional Development

—Five professionals from Anhui CDC attended a training course for one month. The content of training course included the malaria-related molecular biology technology, vector surveillance and detection technology, IFA diagnostic technology and rapid diagnostic technology and GIS (Geographic Information System) analysis technology, etc.

—Submitted by the Central Organization Department and MOH, the institute admitted a core technician from Guizhou CDC in the Key Lab of Parasitic Pathogen and Vector Biology of MOH for one-year advanced study. The technician will study the methods on isolation, identification and molecular biology of *Cryptosporidium*. Under the guidance of the instructor, the technician will be able to basically carry out scientific research independently, including reading literature, choosing and designing projects, implementing the programmes, acquiring conventional and molecular biology technology and bioinformatics methods , and writing papers, etc.

-Two professional and technical personnel from Tianjin CDC accomplished the task in the department of the soil-borne and food-borne parasitic diseases, to achieve the desired objectives.

—During the advanced study in our institute, Mr. Ye Jiaming from National Board of Health of Macao studied the related detection technology of pathogenic parasites and identification methods of eggs, etc. During his visit, he put up the academic exchanges with science and technology personnel, and introduced the related departments of parasitic diseases in Macao and their works carried out in parasites.

—Five undergraduates and postgraduates from other universities and colleagues were admitted to practice in our institute.

2.2.2 Continuing education projects

In 2007, six national continuing education projects were declared and two were approved.

A total of nine continuing education projects were completed this year and all achieved satisfactory results.

The staff in the institute participated in the academic study and professional training totaled 40 person-times.

3 International collaboration and communication

3.1 International exchanges

3.1.1 Visits of foreign guests: 179 foreign visitors coming from 46 countries and regions, *i.e.* Japan, Canada, the United States, Switzerland, Djibouti, Angola, Cameroon, Zanzibar, Zimbabwe, Senegal, Benin, Liberia, Togo, Ethiopia, Eritrea, Ghana, Zambia, Burundi, Nigeria, Guinea, Uganda, Rwanda, Tanzania, Niger, Sierra Leone, Seychelles, Congo (Kinshasa), Australia, the Philippines, Chile, Belgium, Mali, the United Kingdom, Cambodia, Denmark, Indonesia, Italy, South Korea, Laos, Myanmar, Sweden, Thailand, Vietnam, WHO, WPRO, Kenya, Barbados, Jordan, Yemen, Pakistan, Ecuador, Nepal, East Timor, Moldova, Democratic People's Republic of Korea.

3.1.2 Visit abroad: 26 persons to visit 17 countries and regions including the United Kingdom, the United States, France, Australia, Switzerland, Sweden, Japan, South Korea, Thailand, Malaysia, Vietnam, Cambodia, Tanzania, Angola, Kenya, Oman.

3.2 International professional training courses

3.2.1 Our institute undertook "Workshop on Infectious Diseases for African Countries" sponsored by Ministry of Commerce from June 12 to July 1 in 2007. A total of 39 officials from 22 African countries participated in the training. The training achieved the set targets with a complete success. Dr. Khadudu from Tanzania said at the closing ceremony: "We appreciate your organization and conduction of this training. This is a palace of learning and growth of knowledge. We, who are from different African countries, get together today just for this training. We will not only establish long-term intimate friendship with the People's Republic of China, and we Africans will also hold together."

3.2.2 "The seventh conference of workshop for evaluation on parasitic disease burden and the regional network for research, surveillance and control for Asian Schistosomiasis and other relevant helminth zoonosis (RNAS+)" organized by the institute was held in the September 5-7 in Lijiang, Yunnan. Nearly 120 representatives attended the conference from more than 20 countries and international organizations. More than 50 participants attended the training course. It achieved the desired objectives with a complete success.

3.2.3 "Direction of TDR" jointly sponsored by IPD, Association of Parasitic Diseases, Chinese Preventive Medicine Association (CPMA) and the Municipal Parasitic Academy in Shanghai was held on October 25, a total of 35 representatives attended. Dr. Robert Rldiey who is Director of TDR in WHO, introduced the new strategies and key points of TDR in the next 10 years. The articipants discussed the research needs and priorities in the tropical diseases in China

and consulted the possible cooperation with TDR.

3.2.4 "Workshop on Control and Prevention for Malaria and Schistosomiasis for Developing Countries" sponsored by the Ministry of Commerce, was held in Shanghai from the October 17 to Nov. 5. A total of 49 participants from Africa, Asia, South America and other 25 countries participated in the workshop.

4. Professional Standards

During national training courses, we propagandized the promulgated standards for parasitic diseases actively in order to make the professionals comprehending the standards better.

Training course on "the Comprehensive Management of Schistosomiasis for Director in Office for Provincial and Municipal Schistosomiasis Control in the Endemic Areas" was held on May 18-24, 2007, in Ma'anshan City of Anhui Province. "Criterion of Schistosomiasis Control and Elimination" and "Diagnostic Criteria of Schistosomiasis" were introduced to 112 persons from 13 provinces.

Training course on "Malaria Control Program" was held on May 28-30, 2007 in Nanning, Guangxi. The related experts introduced the "Diagnostic criteria of malaria" and "Malaria control and elimination standards (for peer review)" to 70 persons.

To contribute to the elimination of filariasis after monitoring work, Seminars on "Exchanges of Experience and Technical Training for Care of Chronic Filariasis, Elimination of Filariasis after Monitoring" was held on May15-19, 2007 in Wuxi, Jiangsu. "Criteria for Elimination of Eilariasis" was introduced to 45 persons from 16 provincial (autonomous regions and municipalities) CDCs.

Training course on "Prevention and Control of Echinococcosis" was held in May, 2007. The diagnostic criteria of echinococcosis was introduced to 112 persons from CDC and related authorities, who came from 31 echinococcosis endemic regions of Inner Mongolia, Ningxia, Gansu, Qinghai, Xinjiang and Sichuan.

In order to further strengthen the manage of health standards, assessment group from MOH assessed "Professional Standards Committee for Parasitic Diseases of MOH" in the institute on May 22, 2007. The content of assessment included: the current situation of the Committee work, Secretariat staffing, official space, financial support of Linked units and work plan in the future

Through listening to the report, on-site inspection, assessment group inspected the files management, professional funds management and staffing of the Secretariat, as well as the ability to work for standardization and quality, equipment configuration, and so on.

Through the inspection, the experts feedback the results one by one: ①affirmed the detailed, standardized work of the Committee ②despite the Standards Committee set up less than half a year, all kinds of works carried out in an orderly manner , and three related parasitic standards were in progress ③ expressed gratitude to the leaders for their support.

5. Academic work

5.1 "Chinese Journal of Parasitology and Parasitic Diseases" is appraised as the first prize of CPMA a series of excellent journal in the 2005-2006.

5.2 We organized and completed to write the history of Parasitology sub-association of CPMA, reviewed since the establishment of it, under the guidance of the leadership of CPMA and all functional departments, by the support of the linked units IPD, by the efforts of the previous Committee, professional groups and editorial board of the professional academic journal and the support and cooperation of every Provincial Preventive Medicine Associations and the relevant academic organizations and units, it had been got the attention and participation of the National Medical Parasitology personnel who seriously implement the Institute's purposes and tasks, successfully completed the two re-election of academic committee. It had achieved certain results from carrying out academic exchanges and publishing professional academic journals, etc. 5.3 According to the requirements of notification, the "Table of survey and statistic focused on the key works in 2007" was filled out.

§4. 研究论文摘要

血吸虫病

日本血吸虫嗜肌素样蛋白编码基因的克隆表达及其免疫原性研究*

童群波 刘述先 李小红 徐馀信 沈玉娟 曹建平

[目的] 克隆和表达日本血吸虫嗜肌素样蛋白(SjcMLP)编码基因,并研究其重组抗 原的免疫原性。[方法] PCR 扩增 SjcMLP 编码基因,并亚克隆入表达载体 pQE30。将重组 表达质粒 pQE30-SjcMLP 转入宿主菌 E.coliM15,异丙基-β-D-硫代半乳糖苷(IPTG)诱导 表达,用金属 Ni 螯合物亲和层析柱(Ni-NTA)纯化 SjcMLP 重组蛋白(reSjcMLP)。纯化 的 reSjcMLP 采用十二烷基磺酸钠-聚丙烯酰胺凝胶电泳(SDS-PAGE)和免疫印迹试验 (Western blot)作进一步分析。采用酶联免疫吸附试验(ELISA)测定用 reSjcMLP 免疫 C57BL/6 小鼠血清中的抗体水平。[结果] SDS-PAGE 分析表明获得的重组抗原的大小约 24.8kDa,与预计的融合蛋白大小相符。Westernblot 显示该重组抗原能被日本血吸虫尾蚴 感染兔血清识别。用该重组抗原包被进行 ELISA 检测,免疫血清滴度高达 1:12800。但 动物免疫试验结果减虫效果不明显。[结论] SjcMLP 编码基因以可溶性融合蛋白的形式得 到表达,动物免疫试验未诱导出明显的保护力。

*国家自然科学基金(30371262);国家高技术研究发展计划(863计划)(2006AA02Z444、2004AA215240、2004AA2Z3520);上海市科委科技攻 关重大计划(03DZ19231);生物医药重点科技攻关项目(064319026)

日本血吸虫病常用诊断方法现场查病效果的评估*

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[目的] 评估几种常用血吸虫病诊断方法现场查病的效果。[方法] 2005 年 11 月,选取 江西省鄱阳湖沿岸 3 个血吸虫病流行村的 6~65 岁居民为调查对象,用改良加藤厚涂片法 (Kato-Katz 法,3 张涂片)和尼龙绢集卵孵化法进行病原学检测的同时,分别用胶体染料 试纸条法(DDIA)、快速酶联免疫吸附试验(F-ELISA)及 2 种间接红细胞凝集试验(IHA-A 和 IHA-B)进行血清学检测,以评价该几种检测方法的效果。[结果] 3 村共检测居民 1864 人,平均粪检阳性率为 9.7%。改良加藤法在血吸虫病中度、重度流行区的漏检率相对稳定, 为 20.0%~27.8%;尼龙绢集卵孵化法的漏检率在每克粪便虫卵数(EPG)>100 时相对稳定 (约 25%)。DDIA、F-ELISA、IHA-A 和 IHA-B 的平均阳性率分别为 47.8%、50.0%、66.3% 和 40.1%。以病原学检测结果为金标准,DDIA、F-ELISA、IHA-A 和 IHA-B 的敏感性分 别为 75.3%、65.8%、85.6%和 76.0%;特异性为 55.1%、51.7%、35.7%和 63.6%。与其他几 种免疫血清学诊断方法相比,IHA-B 试剂的特异性、Youden 指数、阳性似然比及粪检符合 率最高。DDIA 法与 IHA-B 法的符合率最高(77.3%),而 F-ELISA 和 IHA-A 的符合率最 低(61.5%)。[结论] 在血吸虫病中、重度流行区,改良加藤法虫卵检出率和稳定性均优于 尼龙绢集卵孵化法;IHA-A 的敏感性最高,IHA-B 的 4 个指标最高,具有较高的现场使用 价值,但需进一步提高其敏感性。

* 国家"十五"攻关项目(No. 2004BA718B12) 1 江西省寄生虫病防治研究所

2 安徽省血吸虫病防治研究所

日本血吸虫 3-磷酸甘油醛脱氢酶的克隆 表达及结构预测*

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[目的] 克隆、表达日本血吸虫(大陆株) 3-磷酸甘油醛脱氢酶(SjcGAPDH)编码基因并作结构预测。[方法] 将编码 SjcGAPDH 的 pBluescript 质粒用限制性内切酶 Xho I 和 Sac I 消化后,收集目的片段,与经同样酶切的原核表达载体 pET28b 连接,筛选重组克隆并测序,将正确的重组质粒转化入 BL21(DE3)感受态细菌,异丙基-β-硫代半乳糖苷(IPTG)诱导表达重组蛋白。用 GeneRunner 软件对该蛋白的结构及抗原表位进行预测。[结果] 十二烷基磺酸钠-聚丙烯酰胺凝胶电泳(SDS-PAGE)观察到大小约 42.7kDa 的特异性蛋白条带,与预计一致。免疫印迹试验(Western blot)结果表明致弱尾蚴免疫兔血清可识别该重组蛋白。结构预测表明 SjcGAPDH 的第 50~70、102~122、135~148、165~175、187~205、254~272、278~285 位氨基酸区域可能为蛋白质的抗原优势区域。[结论] Sjc-GAPDH 编码基因克隆、表达获得成功,为开展该分子功能和免疫原性研究奠定了基础,对 GAPDH 的结构和性质预测为探索该蛋白的抗原优势表位提供了理论依据。

日本血吸虫 Sjc97 DNA 疫苗免疫小鼠攻击感染后的组织细胞反应*

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[目的]观察日本血吸虫副肌球蛋白核酸疫苗(Sjc97DNA)免疫宿主攻击感染后的皮肤及肺组织反应。[方法]105只C57BL/6小鼠,随机分成Sjc97DNA疫苗组、空质粒对照组和感染对照组。前两组分别以Sjc97DNA核酸疫苗、空质粒经后腿胫前肌免疫C57BL/6小鼠共2次,每次间隔3周。末次免疫后3周攻击感染,3组小鼠经腹部皮肤攻击感染日本血吸虫尾蚴(800±50)条。于攻击感染后6、18、24、48、72、96、120h,每组分别剖杀5只小鼠,取腹部皮肤及/或肺组织作病理观察。[结果]Sjc97DNA疫苗免疫小鼠攻击感染血吸虫尾蚴后,皮肤炎症反应出现早,炎症细胞杀童虫现象明显,炎症反应强烈,且持续时间长,嗜酸性粒细胞浸润百分比高;而空质粒对照组和感染对照组皮肤炎症轻,持续时间短,杀虫现象不明显。Sjc97DNA疫苗免疫鼠攻击感染后肺部出血斑点出现时间(72h)迟于空质粒对照组和感染对照组(48h)。72~120h,Sjc97DNA疫苗组小鼠肺部局灶性炎症明显,肉芽肿样结节形成,但肺泡壁多正常;而空质粒组和感染对照组小鼠肺组织炎症轻,

^{*} 国家自然科学基金(30371262);国家高技术研究发展计划(863计划)(2006AA02Z444、2004AA215240、2004AA2Z3520);上海市科委科技攻关 重大计划(03DZ19231);生物医药重点科技攻关项目(064319026) 1 湖州师范学院医学院

但肺泡壁水肿有较多红细胞渗入。[结论] Sjc97DNA 疫苗免疫增强了小鼠皮肤及肺组织的 细胞反应及其杀童虫作用。

* 国家高技术研究发展计划(863计划)(2001AA215151)

吡喹酮抗血吸虫作用的研究进展

肖树华

吡喹酮是目前惟一对人体 5 种血吸虫病均有效的治疗药物,其突出优点是口服方便、 安全有效和疗程短。了解其抗血吸虫的作用机制,可能有益于发展新的广谱抗蠕虫药物。 本文综述了近 30 年来国、内外实验室对吡喹酮抗血吸虫作用的研究进展。

抗体差异度法推测血吸虫病患者感染时间的探讨

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[目的] 探讨抗体差异度法推测血吸虫病患者感染时间的可行性。[方法] 检测小鼠和急性血吸虫病患者血清中的 IgM、IgG 抗体水平,并分别计算抗体差异度值,推测急性血吸虫病患者的感染时间;通过循环抗原检测和免疫印迹反应验证急性血吸虫病患者的感染情况,并与现场流行病学调查资料相比对。[结果] 经抗体差异度值分组的急性血吸虫病患者的感染时间明显不同,差异度值大于 0.61 的患者感染时间约为 4~5 周,而小于 0.61 的患者感染时间在 7~8 周以上。[结论] 抗体差异度法在推测急性日本血吸虫病患者的感染时间方面具有可行性。

1深圳市康百得生物科技有限公司

日本血吸虫腺苷脱氨酶基因的克隆和融合表达*

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[目的] 克隆和表达日本血吸虫(Sj)腺苷脱氨酶(ADA)编码基因,分析该基因的系统发育及预测其编码蛋白的空间结构。[方法] 根据表达序列标签(EST)测序的结果设计引物,PCR 法从含有 SjADA 基因的 cDNA 克隆中扩增得到该编码基因片段,亚克隆入原核表达载体 pET32 中表达,表达的融合蛋白用螯合琼脂糖凝胶 FF 亲和层析纯化。采用 MrBayes 算法构建系统发育进化树,用自动蛋白注释工具(DS GeneAtlas)软件模拟 SjADA 的蛋白空间结构。[结果] 获得 SjADA 基因全长为 1 059 bp 的编码序列,并克隆、表达和 纯化了重组蛋白(SjADA)。生物信息学分析显示,该基因与曼氏血吸虫的同源基因之间 的序列一致性仅 25%,属于不同的亚家族。其空间结构与 PDB 模板 1A4M 的一致性为 41%, 具有相似的二级结构和相应的活性位点残基。[结论] 获得了 SjADA 重组蛋白。提示日本

血吸虫嘌呤补救合成代谢途径与曼氏血吸虫有差异。

用贝叶斯方法对日本血吸虫感染两种检测方法进行评价*

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[目的] 探讨估计日本血吸虫感染两种检测方法(ELISA 和 Kato-Katz)在现场应用时的灵敏度和特异度的新方法。[方法] 采用贝叶斯(Bayes)统计方法,利用 2005 年云南省 洱源县现场调查资料,对两种方法在流行区和非流行区应用时的检测效果分别进行了评价。[结果] 在流行区,ELISA 灵敏度较高(0.913,中位数,下同)而特异度较低(0.584), Kato-Katz 法灵敏度低(0.148)而特异度很高(0.994);在非流行区,ELISA 灵敏度为 0.766, 特异度为 0.908, Kato-Katz 法灵敏度和特异度与其在流行区的相似。[结论] 在无金标准的 情况下, Bayes 方法能够对检测方法做出科学的评价。

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上海市流动人口对血吸虫病传播的潜在危险性研究*

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[目的] 掌握流动人口对上海市血吸虫病传播可能造成的潜在危险性。[方法] 2004 年在 上海市城郊结合部流动人口较多的闵行区和浦东新区,根据整群随机抽样原则两区各抽取 3 乡 (镇)、每乡 (镇) 各抽取 1 行政村作为调查点,居住满 1 个月以上、≥1 周岁的外来 流动人口为调查对象,进行问卷调查和间接红细胞凝集试验 (IHA)。IHA 阳性者再以尼龙 绢集卵孵化法进行粪检。[结果] 共调查流动人口 2931 人,其中男性 1575 人 (占 53.74%), 女性 1356 人 (占 46.26%)。血清学检测阳性率为 4.71% (138/2931)。来自血吸虫病流行 省的流动人口共 1938 人 (占 66.12%),其中血清学检测阳性率为 5.99%,显著高于来自传 播阻断省的 2.60% (χ2=10.28, P<0.01) 和非流行省的 1.68% (χ2=12.86, P<0.01)。对 138 例血清学检测阳性者进行集卵法粪检,均为阴性。根据 2004 年全国未控制和控制血吸虫 病的地区人群感染和发病情况,推算上海市来自未控制地区和控制地区的流动人口中血清 学检测阳性数约为 15055 例 (分别为 13356 和 1699 例),发病人数约为 2423 例 (分别为 2168 和 255 例),其中来自安徽省的流动人口的血清学检测阳性数及发病人数均占首位。[结 》流动人口为上海市血吸虫病潜在流行的主要隐患因素。

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^{*} 国家自然科学基金重大项目(编号 30590373);联合国儿童基金会/联合国开发署/世界银行/世界卫生组织热带病研究与培训特别规划署资助项 目 (TDRA30298)

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日本血吸虫 HGPRT 编码基因的克隆与表达*

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[目的] 克隆和表达日本血吸虫大陆株次黄嘌呤鸟嘌呤磷酸核糖转移酶(HGPRT)编 码基因。[方法] 依据 GenBank 日本血吸虫 HGPRT 开放阅读框(ORF)设计一对引物,上 游和下游引物分别引入 BamH 和 Sal 酶切位点。以日本血吸虫大陆株(安徽株,简称 Sjc-A) 成虫总 RNA 为模板,反转录 PCR (RT-PCR) 扩增日本血吸虫大陆株 HGPRT (SicHGPRT) 全长编码基因。经双酶切纯化的 PCR 产物与同样双酶切纯化的 pET28a 质粒 DNA 片段用 T4DNA 连接酶连接,构建重组质粒 pET28a-SjcHGPRT,转化感受态 E.coli BL21,并大量 扩增。重组质粒 DNA 经限制性内切酶双酶切、PCR、琼脂糖凝胶电泳和核苷酸序列测定 进行鉴定。pET28a-SjcHGPRT/E.coli BL21 工程菌用 IPTG 诱导表达,重组蛋白用 SDS-PAGE 和 Western blot 分析。[结果] SicHGPRT 编码基因 RT-PCR 产物约 700bp,构建的 pET28a-SjcHGPRT 重组质粒 DNA 经限制性内切酶双酶切和 PCR 扩增产物于琼脂糖凝胶电 泳均观察到相同大小的基因片段,根据核苷酸序列测序结果推导的氨基酸序列与报道的日 本血吸虫大陆株(湖南株,简称 Sjc-H)及曼氏血吸虫 HGPRT 分别有 99%和 83%的同源 性。获得的重组蛋白(reSjcHGPRT)经 SDS-PAGE 和 Western blot 分析, 分子量约 30kDa, 并能被抗 His-G-HRP 抗体、日本血吸虫感染小鼠血清和日本血吸虫病人血清识别。[结论] 日本血吸虫大陆株(安徽株)HGPRT 表达获得成功,并获得了纯化重组蛋白,为开展该 分子功能和免疫原性研究奠定了基础。

* 国家自然科学基金(30371262);国家高技术研究发展计划(863计划)(2006AA02Z444);上海市科委科技攻关重大计划(03DZ19231);生物医 药重点科技攻关项目(064319026) 1 苏州大学医学院

日本血吸虫弹性蛋白酶基因的克隆、表达及虫期特异性转录*

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[目的] 克隆和表达日本血吸虫弹性蛋白酶基因(SjCE-2b),纯化表达重组蛋白,并研究该基因在各虫期的转录情况。[方法] 预测 SjCE-2b 基因的编码序列。绘制血吸虫尾蚴弹性蛋白酶家族成员系统进化树。用 RT-PCR 和蛋白质印迹(Western blotting)分析 SjCE-2b 基因在日本血吸虫各期转录的差异。将 RT-PCR 扩增得到的 SjCE-2b 基因亚克隆至载体 pET28b,在大肠埃希菌中诱导表达得到重组蛋白 rSjCE-2b,用组氨酸标签亲和层析法纯化 表达产物,Western blotting分析其免疫原性。[结果] 在虫卵、子胞蚴和成虫检测到 SjCE-2b 基因转录本(714bp),表达的重组蛋白 rSjCE-2b,相对分子质量约为 Mr 31000,与预测的融合蛋白相对分子质量相符。构建了重组原核表达载体 SjCE-2b/pET28b,并在大肠埃希菌中表达。纯化后的重组蛋白 rSjCE-2b 可被日本血吸虫感染的兔血清识别。[结论] 在日本

血吸虫虫卵、子胞蚴和成虫发现 SjCE-2b 基因转录本。SjCE-2b 基因有可能成为潜在的日本血吸虫病疫苗候选抗原和药物及诊断靶点。

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血吸虫病传播阻断地区监测人群筛查的费用与效果

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[目的] 通过对血吸虫病传播阻断地区监测人群查治病费用与效果数据的收集和分析, 探索主、被动监测防治策略的合理配置。[方法] 采用回顾性调查、历史文献复习法分析 2003~2005 年血吸虫病传播阻断地区浙江省、广东省、广西壮族自治区监测人群查治病费 用与效果。[结果] 2003~2005 年,3 省(区)血吸虫病主动监测查治病费用中,浙江省监 测总费用及年平均费用最高,分别为 679.82、226.61 万元;广西区最低,分别为 8.39、2.80 万元。被动监测查治病费用中,浙江省监测总费用及年平均费用最高,分别为 0.59、0.20 万元;广西区最低,分别为 0.18、0.06 万元。每查治一病例的平均费用,主动监测中,广东 省最高,为 17.23 万元;广西区最低,为 8.39 万元。被动监测中,广东省最高,为 0.06 万 元;浙江省最低,为 0.02 万元。人均血检费用广西区最低,广东省最高。人均类检费用广 西区最低,浙江省最高。[结论] 在不同区域内血吸虫病主、被动监测查治病策略的优化配 置模式需要进一步深入探讨。

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三峡库区当地人群日本血吸虫 IgG 抗体特征研究

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[目的] 掌握三峡库区当地人群抗日本血吸虫特异性抗体本底分布特征, 探讨库区人群 抗血吸虫特异性抗体的影响因素。[方法] 选择三峡库区中段万州区的当地居民为研究对 象,用统一的调查表进行个案调查, 采集2~3ml静脉血, 检测人群血吸虫特异性抗体(IgG)。 [结果] 调查 633 人,人群血吸虫抗体水平几何平均数(OD 均值)为 0.0145,抗体阳性率 为 3.32%(21/633);男性 OD 均值为 0.0140,女性为 0.0150,二者间差异无统计学意义 (t=0.543, P=0.587)。男性阳性率为 3.103%,女性 3.499%,差异无统计学意义(!2=0.076, P=0.782)。70岁以上组 OD 均值最高(0.0252),10~19岁组最低(0.0058),年龄组与 OD 均值呈明显的相关(r=0.224, P=0.000);学生 OD 均值显著低于家庭妇女(P=0.0000)、农 民(P=0.0000)和工人(P=0.0000);学历与 OD 均值存在明显的相关(r=0.199, P=0.000),

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学历越高,OD 值呈下降趋势;抗体水平全频率分布曲线均呈"L"型,OD 均值小于 0.03 者占 63.8%,小于 0.07 者分别为 91.3%。多因素逐步回归分析表明,职业(t=2.3221, P=0.0211) 和人均年收入(t=-2.2724, P=0.0240)与抗体水平显著相关。[结论] 三峡库区人群日本血吸虫特异性抗体水平低,呈非流行区人群分布特征;三峡库区存在潜在的影响人群血吸虫特异性抗体水平的因素;建议进一步健全三峡库区血吸虫病监测体系,针对重点人群,开展健康教育,预防和控制血吸虫病在三峡库区发生和流行。

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2006 年全国血吸虫病监测结果分析

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[目的]分析 2006 年全国血吸虫病疫情监测点的疫情数据,了解监测点的疫情变化趋势。[方法] 80 个监测点统一按照《全国血吸虫病疫情监测方案》开展人群及家畜病情、螺情和相关因素调查,数据汇总整理,分析 2006 年的监测结果。[结果] 2006 年全国监测点人群血检阳性率为 13.60%,粪检阳性率 1.59%,均比 2005 年有所下降;流动人口血检阳性率为 5.79%;现有晚期血吸虫病人 143 例,共报告急性血吸虫病人 12 例,各监测点均无突发疫情报告。共检查家畜 5365 头,圈养家畜仅占 4.74%,其余均为敞放或圈放兼有的饲养方式,家畜感染率为 5.93%,比 2005 年下降 34.49%,尤其是黄牛和羊的感染率比 2005 年有所下降。2006 年春季共调查钉螺面积 7429.63hm2,查出有螺面积 4994.01hm2,感染性钉螺面积 621.75hm2,新发现钉螺面积 21.75hm2,活螺平均密度为 0.5448 只/0.1m2,钉螺感染率为 0.37%,较 2005 年的 0.26%有所上升。[结论] 2006 年全国血吸虫病监测点人群、家畜中的黄牛和钉螺疫情较 2005 年都有所下降。

日本血吸虫腺嘌呤磷酸核糖转移酶的生物信息学鉴定与分析*

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[目的] 鉴定日本血吸虫中存在的腺嘌呤磷酸核糖转移酶,分析其蛋白结构特征。[方 法]采用双向同源比对、结构域搜索和系统发育分析等生物信息学手段,在已有转录组和 蛋白质组数据基础上鉴定日本血吸虫的腺嘌呤磷酸核糖转移酶,并采用同源建模方法获 得日本血吸虫腺嘌呤磷酸核糖转移酶的结构特征。[结果] 获得了 2 条腺嘌呤磷酸核糖转 移酶的同源蛋白序列;分析了这 2 条序列的 EST 丰度、理化性质及蛋白三维结构等信息。 [结论] 日本血吸虫至少存在 2 个腺嘌呤磷酸核糖转移酶的异构体。

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两次全国血吸虫病流行病学抽样调查未控制流行区调查样本的构成分析

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[目的] 分析两次全国血吸虫病流行病学调查(简称流调)未控制流行地区的调查样本 人口结构,了解主要构成的不同,为进一步准确推断病人数和确定感染率打好基础,同时 为以后的流调工作提供参考。[方法] 采用第2次流调的粪检人数和第3次流调的血检人数 比较其不同流行类型、年龄、性别和职业构成所带来的影响。[结果] 第2和第3次全国流 调未控制流行地区抽样所得抽样点各省构成差异无显著性(χ2=3.06, P=0.08);各省的调 查人数总体构成有一定的变化;流行类型、年龄和职业总体构成差异有显著性(χ2 值分别 为 1612.53、4207.02、55.66, P<0.01)。[结论] 未控制流行地区两次流调在流行类型、年 龄和职业的总体构成上存在一定的差别。这些差别可能来自于调查方法和对象的不同,也 可能是某次调查因为客观原因造成调查对象不够全面而产生的偏差,流行病学调查过程中 只有扩大人口资料的收集,同时充分估计这些偏差的大小,才能得出相对准确的结论。

日本血吸虫成虫和虫卵可溶性抗原及其组分抗原的研究*

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[目的] 探讨日本血吸虫雄虫、雌虫、虫卵的可溶性抗原雄虫(AWA-m、雌虫 AWA-f、 虫卵 SEA)及其组分抗原的特性。[方法] 用 DE22 纤维素层析柱对日本血吸虫 AWA-m, AWA-f, SEA 抗原进行纯化,得到相应组分抗原。分别以 SDS-PAGE 和 Western b lot 对 组分抗原进行全面分析,并与相应未经纯化的可溶性抗原作比较。[结果] 经 DE22 纤维素 层析处理的 AWA-m, AWA-f, SEA,均能获得含多种蛋白的组分抗原。SDS-PAGE 结果 表明,AWA-m 见 10 条主带和 9 条次带,其中 Mr37 000,28 000,25 000 为特异性条带, 出现 8 条免疫反应阳性带;而 AWA-m组分抗原为 9 条蛋白带和 6 条免疫反应阳性带。AWA-f 见 15 条蛋白带,其中 Mr26 500 为特异性条带,组分抗原为 8 条蛋白带。AWA-f 粗抗原及 其组分抗原均见 9 条反应带。SEA 见 8 条主带和 10 条次带,13 条为免疫反应阳性条带;SEA 组分抗原见 11 条带,其中 9 条为免疫反应阳性带。[结论] AWA-m, AWA-f, SEA 经 DE22 纤维素层析纯化获得组分抗原,方法简单、可靠。该组分抗原含有粗抗原的主要免疫反应 成分,去除了多种与日本血吸虫病免疫反应无关的蛋白。

- * 江苏省高校自然科学基金资助项目(01KJB310012)
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三峡建坝后血吸虫病传播危险因素研究Ⅱ库区社会经济因素变化对血吸虫病 传播的影响*

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[目的] 了解三峡库区社会经济因素变化对血吸虫病传播的影响。[方法] 采用流行病 学、免疫学和社会医学相结合的方法,调查三峡库区流动人口、库区移民、家畜血吸虫病 传染源和钉螺输入库区的潜在危险因素,以及建坝后社会经济发展变化对血吸虫病传播的 潜在影响因素。[结果] 三峡库区存在从血吸虫病疫区引进花草树木和牲畜,存在将钉螺和 动物传染源带入库区的可能;流动人口中有 31.43%曾患过血吸虫病, 37.27%曾接触疫水, 1.18%查出血吸虫病抗体阳性,流动人口将成为库区血吸虫病的主要传染源;库区的 4 大经 济产业中,畜牧业、水产养殖业和旅游业均有可能造成传染源的输入。[结论] 三峡库区社 会经济发展变化将使库区成为血吸虫病的潜在流行区,应加强监测。

- * 国家"十五"科技攻关项目(No. 2001BA705B-08)
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我国控制和消灭血吸虫病标准的作用与演变

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我国控制和消灭血吸虫病标准(GB15976-1995)的制订,对我国的血吸虫病防治工作 起到了积极的促进作用。目前,我国血吸虫病防治的形势发生了明显的变化。为此,卫生 部血吸虫病专家咨询委员会在广泛征求多方面专家、管理人员意见的基础上,完成了原标 准的修订工作,制订了新的控制和消灭血吸虫标准,以更科学地指导我国今后的血吸虫病 防治工作。本刊刊登了卫生部血吸虫病专家咨询委员会专家撰写的关于修订标准的4篇论 文,对我国控制和消灭血吸虫病标准的作用与演变、技术指标的探讨、实施中的注意问题 等方面作了全面的阐述,将有助于各地对新标准的学习、理解和执行。

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疟疾

PCR 检测恶性疟原虫感染蚊方法的建立

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[目的] 建立一种简便的可应用于现场蚊感染恶性疟原虫的 PCR 检测方法。[方法] 采用针对恶性疟原虫小亚单位核糖体 DNA(SSUrDNE)的特异引物,利用 PCR 技术,从实验室感染及现场采集的感染恶性疟原虫的蚊基因组 DNA 中,扩增恶性疟原虫 SSUrDNA 片断,进行恶性疟原虫的检测。[结果] 扩增产物经过琼脂糖凝胶电泳分析,可检测出特异的约 188bp 大小的 DNA 片段,其基因序列于预计序列完全一致。估测每份蚊 DNA 样本中含有 10 个以上子孢子即可获得此片段,而对间日疟原虫及未感染蚊 DNA 不能扩增出此片段。[结论] 该 PCR 检测方法可以应用于现场恶性疟原虫感染蚊的检测。

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ARIMA 模型在疟疾发病预测中的应用*

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[目的] 探讨 ARIMA 时间序列模型在疟疾发病预测中的应用,建立疟疾发病率的预测模型。[方法] 基于 1996~2005 年安徽省怀远县的疟疾月发病资料,采用最大似然法估计模型参数,按照残差不相关原则、简洁原则确定模型结构,依据 AIC 与 SBC 准则确定模型的阶数,建立 ARIMA 疟疾预测模型。并用所得模型对 2006 年该县疟疾发病率进行预测。 [结果] ARIMA (0, 1, 1) × (0, 1, 1) 12 模型能较好地拟合既往时间段上的发病率时间序列,其方差估计值为 0.60, AIC=187.00, SBC=193.58,数学函数式为 (1-B) (1-B12) Zt=(1-0.591B)(1-0.281B12) at。该模型对 2006 年月发病率的平均预测误差仅为 0.03。[结论] ARIMA 模型可较好地拟合疟疾发病在时间序列上的变化趋势,是一种精度较高的短期预测模型。

* 科研院所社会公益研究专项资助项目(No2005DIB1J092)

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贵州省从江县疟疾局部暴发的影响因素分析

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[目的] 为确定 2006 年 7 月贵州省从江县局部疟疾暴发的影响因素。[方法] 在疟疾暴 发点进行流行病学调查,对 495 名常住居民采集滤纸干血滴,用间接荧光抗体试验(IFAT) 检测人群抗体水平。对其中 423 人进行问卷调查,内容包括两年内疟史、疟防知识知晓情 况、蚊帐使用情况、露宿习惯等。收集乡卫生院门诊发热病人登记资料,分析发热病人就 医行为。复查上报的 42 例疟疾病例阳性血片和同期普查的部分阴性血片。按蚊调查仅做 半通宵人饵诱捕和人、牛房密度调查,分析该地传播媒介组成和叮人率等。[结果] 42 张阳 性血片经复查确定 12 张阳性均为间日疟原虫,18d 的疟疾罹患率为 2.1%(16/753,包括 4 例临床诊断病例)。居民平均荧光抗体阳性率为 8.7%(43/495),阳性几何平均滴度倒数 (GMRT)为 20.6,总的 GMRT 为 10.6,其中 5 岁以下组抗体阳性率为 7.5%(3/40),阳 性 GMRT 为 25.1。发热病人就诊率为 81.3%(118/145),平均发热后 3.9d 就诊。疟防知识 知晓率平均为 25.5%(108/423),文盲组、小学组和中学组分别为 17.1%、29.2%和 40.0%, 组间差异有统计学意义(P<0.01)。蚊帐使用率平均为 31.0%(131/423),露宿率平均为 40.7% (172/423)。2004 和 2005 年休根治疗率分别为 68.2%(15/22)和 48.3%(14/29)。当地传 疟媒介除中华按蚊外还存在嗜人按蚊和微小按蚊,人房帐内捕获嗜人按蚊和微小按蚊,叮 人率分别为 0.0566 和 0.0755。[结论] 当地存在我国重要传疟媒介,因灾后居民居住条件 简陋,自我保护意识薄弱,且有露宿习惯,疟疾病例的发现和治疗均不及时等,是促成了 该起疟疾暴发的主要原因。

1 贵州省疾病预防控制中心

疟疾暴发流行的监测和预测

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作为严重危害人民健康和影响社会经济发展的虫媒传染病之一,疟疾的暴发流行受自 然因素、社会经济因素和人群免疫状况等的影响,而通过传染源、媒介以及有关影响因素 的有效监测,借助数理统计模型和 RS/GIS 新技术,有望实现疟疾暴发的早期预测预警。

湖北疟疾高传播地区疟防知识、态度和行为研究

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[目的] 明确湖北中华按蚊地区疟疾高发病率的社会和行为学因素,为设计以改善该地 区疟疾流行状况为日的的应用性研究提供基线数据。[方法] 选取湖北省枣阳市璩湾镇曹冲 村为研究点,于 2004 年 6~7 月,通过与市疾病预防控制中心及乡镇卫生院疟防人员的专 题小组讨论了解该地区的疟疾流行与防治状况、与村领导的专题小组讨论了解该村的疟疾 流行与防治状况以及村民的疟防知识、态度和行为,并通过简单随机抽样和问卷共调查了 201 户居民的家庭情况、疟防知识信念、家庭患疟情况和求医行为、家庭疟疾预防行为、 对疟防活动的知晓情况等。[结果] 70%多的居民认为疟疾与蚊虫叮咬有关,有 30.8%的居 民给出了错误看法,有 13.9%的居民不知道疟疾如何引起和传播。约 97%的居民知道反复 发冷发热是疟疾的典刑症状,77.1%的居民表示患疟后到村诊所就诊。95%的家庭拥有蚊 帐,81%的家庭拥有蚊虫驱避剂,98.0%的居民认为服用抗疟药是预防患疟疾的首要方法。 村诊所不具备显微镜或快速诊断试条,村医受经济利益驱动常对症状不典刑患者给与抗生 素或退热药治疗,上报疟疾病例的积极性不高。乡镇卫生院工资低,疟防人员流动性大。 [结论] 科学的疟防知识尚未完全取代当地居民的传统认识,有必要开展一项有针对性的健 康教育活动,进一步改善当地居民的疟疾防治知识、意识和行为;村医在疟疾防治中的作用 需要加强,有必要加大对村医正确诊断、规范治疗和及时上报疟疾病例方面的支持、培训 和管理;基层疟防人员的稳定性应予以重视。

1 湖北省疾病预防控制中心传染病防治研究所

3 枣阳市璩湾镇卫生院

多重 PCR 技术检测恶性疟原虫抗药性相关分子标志的方法研究*

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[目的]建立恶性疟原虫5个主要抗药性相关基因的单管多重 PCR 扩增方法,用于恶性疟原虫抗药性分子标志检测。[方法] 依据各基因参考序列,运用 Primer Premier 5.0 和 01igo6.0 软件,设计5 对特异性引物,采用 Hot Start Taq DNA 聚合酶,设置递增延伸温度,对恶性疟原虫标准株(3D7、Dd2 和 HB3)、分离株(FCC1/HN、CMH/YN)、现场标本(来源于海南、云南和缅甸)、近缘虫种对照(间日疟原虫、伯氏疟原虫、食蟹猴疟原虫、杜氏利什曼原虫和牛源隐孢子虫)和空白对照(以 H20 为模板)进行5 个抗药性相关基因(包括恶性疟原虫氯喹抗性转运蛋白基因 Pfcrt、多药抗性基因 Pfmdr1、二氢喋酸合成酶基因 Pfdhps、二氢叶酸还原酶基因 Pfdhfr 和三磷酸腺苷酶第6 亚基基因 PfATPase6)的单管多重 PCR 扩增,2%琼脂糖凝胶电泳鉴定扩增结果,测定扩增产物序列,并与参考序列(3D7 株)比对。[结果] 经电泳,恶性疟原虫标准株、分离株和现场标本的多重 PCR 扩增产物均可见5条目标条带。测序结果与参考序列比对,高度同源,最低同源性为 98.5%。模板 DNA 量达 0.1ng 即满足扩增要求,近缘虫种对照和空白对照未见扩增产物。[结论] 多重 PCR 技术实现了单管 1 次反应完成5 个抗药性相关基因的扩增,该方法灵敏,特异性好,有助于提高恶性疟原虫抗药性分子标志的检测效率。

*国家"十五"科技攻关项目(No. 2004BA718B13)

快速诊断疟疾胶体金免疫层析试条方法的建立与评价

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[目的] 建立一种能区分恶性疟的快速、简便诊断疟疾的胶体金免疫层析试条方法,并 对其进行评价。[方法] 筛选基于恶性疟原虫乳酸脱氢酶制备的单克隆抗体对,采用柠檬酸 三钠还原法制备胶体金颗粒,标记筛选到的单克隆抗体 F4H12、G4C9 和 D8F7,并将其吸 附于样品垫;将单克隆抗体 B2G10(针对恶性疟原虫与间日疟原虫)和 D6A7(只针对恶性 54

² 枣阳市疾病预防控制中心

疟原虫)分别划线包被于同一硝酸纤维素膜适当位置,制成免疫层析检测试条。用该试条 检测疫区非疟疾发热病人血样(107份)和内脏利什曼病患者血样(17份)以评价其特异 性,检测确诊的疟疾患者血样(间日疟 110份,恶性疟 54份)以评价其敏感性。均用单 盲法检测。[结果]检测 107份疫区非疟疾发热病人血样和 17份内脏利什曼病患者血样, 有 119份显示为阴性,特异性约为 96.0%;其中 17份内脏利什曼病患者血样全部为阴性。 检测 164份疟疾患者血样,阳性 153份,敏感性为 93.3%,其中间日疟检出率为 92.7% (102/110),恶性疟检出率为 94.4%(51/54)。[结论]研制出的快速诊断疟疾胶体金免疫 层析试条敏感性、特异性均较高。

*科技部研究院所技术开发研究专项基金(No. 2003-EG150182)

运用 Kriging 法对我国黄淮流域疟疾空间分布特征的研究*

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[目的]研究我国黄淮流域疟疾空间分布特征。[方法]收集安徽、河南及湖北省沿黄淮流域地区 2005 年有疟疾报告的 156 个市、县的当年发病率资料,利用 Arcgis 9.0 软件建立 疟疾发病的地理信息系统,并在该软件的统计学扩展模块支持下,利用 Kriging 法对已建 立的疟疾地理信息系统数据库进行空间插值分析,根据无偏最优的原则绘制疟疾发病概率 的空间分布图,建立半变异函数,并对预测值的标准误差的分布制图。[结果] 2005 年黄淮 地区疟疾发病分布呈空间自相关,自相关阈值 98 928 m,其变异函数为球形模型,显示疟 疾发病分布呈空间聚集性。交叉检验显示 Krig-ing 法生成的疟疾概率分布图是对黄淮地区 疟疾空间分布的最优无偏估计,标准化均值为 0.008 621。[结论] Kriging 法能较好估计黄 淮地区疟疾的空间分布特征,该地区的疟疾在空间分布上与距离有关,并呈现以安徽省中 北部与河南交界及河南省与湖北省交界的两个明显的聚集中心,而且其空间分布并非与行 政区划分类完全一致。

2006 年全国疟疾形势

周水森 王漪 汤林华

本文根据 2006 年全国有疟疾发病的 23 个省(市、区)专业单位上报的年度疟疾防治 工作总结和有关疫情报表(年报系统)汇总整理,除特别注明"网络直报系统"外,所有疫 情数据均来自年报系统。2006 年全国 23 个省(市、区)917 个县有疟疾病例报告,发病 数较 2005 年上升 51.7%。

^{*} 科研院所社会公益研究专项资助项目(No. 2005DIB1J092)

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基因芯片技术在疟疾研究中的应用

张国庆 汤林华

20 世纪 80 年代末发展起来的基因芯片技术在生命科学中国研究领域中以娴熟出强大 优势。恶性疟原虫和冈比亚按蚊全基因组测序完成后,该技术开始逐步应用于疟原虫、传 疟按蚊以及疟疾动物模型的研究。该文概述了基因芯片的基本原理及其在疟疾研究中的应 用。

利什曼病

中国犬源性和野生动物源性内脏利什曼病的研究进展

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我国内脏利什曼病在整个演化过程中反映出不同的流行病学特点,从原始野生动物经 犬到人的三个演化阶梯,即野生动物源性内脏利什曼病、犬源性内脏利什曼病和人源性内 脏利什曼病。我国陇南川北山区是内脏利什曼病自然疫源地和犬源性内脏利什曼病并存的 疫区。人偶尔可直接从野生动物宿主经野生中华白蛉而感染,而更多的是野生动物宿主通 过野生白蛉由犬再经白蛉传染给人。阐明这一传播关系,从理论上探讨内脏利什曼病的起 源和演化规律,按其各自的特点和规律来制定计划,将对内脏利什曼病和媒介白蛉的预防 与控制的实施具有重要指导意义。

甘肃省文县流行区人群婴儿利什曼原虫无症状感染现状*

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[目的] 分析甘肃省文县内脏利什曼病流行区人群利什曼原虫无症状感染现状,评价 PCR、ELISA 和 rK39 免疫层析试条法检测利什曼原虫无症状感染的潜能。[方法] 2004 年 10 月在甘肃文县对 269 例无内脏利什曼病现症及病史的人群采取随机取样法采集静脉血, 分别用 RV1-RV2 和 K13A-K13B 两组 PCR 引物检测血样中的利什曼原虫特异 DNA,以利 什曼原虫可溶性抗原为包被抗原的 ELISA 法和 rK39 免疫层析试条法分别检测利什曼原虫 特异性抗体,并比较几种检测方法的敏感性。[结果] PCR、ELISA 和 rK39 免疫层析试条 法检测人群利什曼原虫无症状感染的阳性率分别为 30.9% (83/269)、24.2% (65/269) 和 0 (0/269)。[结论] 甘肃省文县内脏利什曼病流行区人群存在大量利什曼原虫无症状感染 者,PCR 是检测无症状感染较敏感、特异的方法。

^{*} 世界卫生组织 TSA 基金 (No. 1079946)

¹ 甘肃省疾病预防控制中心

利什曼原虫的传播机制及传媒蛉种的研究进展

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该文综述了人体利什曼原虫的传播机制及传媒蛉种研究的现状和进展,并通过分析媒 介白蛉与利什曼原虫的相互关系,认为利什曼原虫虫种的鉴定应在分析原虫 DNA 的基础 上,结合该利什曼原虫与其他虫种在致病特征和流行病学上的差异综合考虑,这样才具有 价值。

螺类

三种方法检测福寿螺肺囊内广州管圆线虫效果的比较研究*

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[目的] 比较肺检法、匀浆法和酶消化法检测福寿螺肺囊内广州管圆线虫的效果,以 寻找快捷检测方法。[方法] 将 60 只实验室人工感染广州管圆线虫的福寿螺均分 2 组,分 别解剖成螺肺囊与肌肉两部分。镜检两组螺肺囊广州管圆线虫幼虫结节数,用匀浆法和酶 消化法分别检测螺肺囊中广州管圆线虫幼虫,比较不同检测方法的效果。酶消化法同时检 测福寿螺肌肉内幼虫数,分析螺肺囊与肌肉内幼虫数的相关关系。[结果] 肺检法、匀浆 法和酶消化法等 3 种方法检测螺肺囊内幼虫的灵敏度依次为 96.7%、93.4%和 100%,差异 无统计学意义(x 2=2.069, P>0.05)。肺检法的检测速度明显快于匀浆法与酶消化法,差 异具有统计学意义(Z=4.782, P<0.01);螺肺囊与肌肉组织内的幼虫数呈正相关(r=0.847, P<0.01)。[结论] 肺检法的检测效果与匀浆法和酶消化法相似,但其检测速度更快,适合 现场大规模螺体广州管圆线虫的定性筛查。

* 国家"十五"科技攻关项目(No. 2003BA712A09-01)

"荣宝"在山丘型血吸虫病流行区的灭螺效果

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[目的] 评价"荣宝"在山丘型血吸虫病流行区的灭螺效果。[方法] 选择四川省眉山市多 悦镇园坪村 64134m2、富牛乡五星村 50934m2 的自然免耕栽培的稻田,采用"荣宝"与干细 土混匀后撒施,同时以地形和植被相似的园坪村 36600m2、五星村 4333m2 的免耕田作为 对照,园坪施药组及对照组田间沟渠未采取灭螺措施,五星施药组及对照组田间沟渠采用 氯硝柳胺泥敷。观察各组有螺框出现率、活螺平均密度的变化情况及外环境干扰的影响, 了解农作物的施肥和收成情况。[结果] "荣宝"的灭螺效果,无论近期或远期五星村实验组 均好于园坪村,经过一个种植季节,园坪实验组有螺框出现率下降了 68.64% (χ2=136.58, P<0.01),活螺平均密度下降了 35.78% (Z=-2.22, P<0.05);五星实验组的有螺框出现率下 降了 97.03% (χ2=349.68, P<0.01),活螺平均密度下降了 96.64% (Z=-7.65, P<0.01)。"荣 宝"试验组的费用效益比对照组每平方米可以增加收入 0.06 元。[结论] "荣宝"灭螺适合在 免耕田里施用,具有一定的杀灭田间钉螺的作用,同时增产和减少开支。在使用"荣宝"田 间灭螺时应同时进行沟渠钉螺的处理。

1 四川省疾病预防控制中心寄生虫病预防控制所

2 四川省眉山市东坡区血吸虫病防治站

水温对广州管圆线虫感染福寿螺影响的研究*

刘和香 张仪 吕山 朱丹 王显红 吴缨 胡铃 吴世芳 周晓农

[目的] 通过观察不同水温对广州管圆线虫感染福寿螺的影响,了解福寿螺受感染的适 宜水温和最低临界温度。[方法] 实验室培养子代福寿螺和福建株广州管圆线虫 I 期幼虫分 别于 5℃、10℃、15℃、20℃、25℃、和 30℃的恒温箱中预温 4h,达到所需温度后,分别 将各温度组广州管圆线虫 I 期幼虫倒入相应温度组的螺容器内使其感染,24h 后观察记录 各组螺的开厣率并移置(24℃±1℃)水温环境中饲养。20d 后进行解剖,统计各组螺的感 染率及感染度,分析感染率和感染度与感染水温的相关性。[结果] 6 组温度螺的感染率依 次为 0%、20%、55%、95%、100%、100%,福寿螺的感染率与水温间变化趋势的曲线方 程为 Y=1E-05x4-0.0011x3+0.0292x2-0.2362x+0.5833,推算最低临界感染温度值为 6.66℃。 感染度与水温有相关性(rs=0.3448, P<0.0032)。其中 25℃与 30℃虫负荷较高,25℃感染 温度大于 500 条幼虫的螺数最多。[结论] 广州管圆线虫感染福寿螺的适宜水温范围为 20~ 30℃,最佳感染温度为 25~30℃,理论上水温<6.66℃,福寿螺丧失摄入幼虫的能力。根 据温度范围及幼虫生长规律推断:春夏秋季为螺感染的危险温度;夏秋季为流行该病的危险 季节。

* 国家"十五"科技攻关项目(No. 2003BA712A09-01)

新型植物灭螺剂 HL 对钉螺作用机制研究*

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[目的] 通过观察新型植物灭螺剂 HL 对钉螺体内酶活性的影响,以期阐明 HL 类植物 灭螺药物对钉螺的作用机理。[方法] 将钉螺分别浸泡于 25mg/L、50mg/L、100mg/L HL 植 物灭螺剂和去氯水中 48h 后,去壳、分离软体、置冰冻切片机切片,用酶组织化学方法显 示乳酸脱氢酶 (LDH)、琥珀酸脱氢酶 (SDH)、乙酰胆碱酯酶 (AChE)、细胞色素 C 氧化

酶(CCo)和一氧化氮合酶(NOS),观察其变化,并采用显微图像分析系统,通过比较灰度值定量测定其活性。[结果]钉螺 LDH、SDH、AChE、CCo和 NOS 定位于肌纤维、口囊、表膜、神经节、消化腺、咽管等部位酶活性随浸泡 HL 灭螺剂浓度的增大而酶活性减弱越明显,且与对照组有显著差异。[结论] HL 的灭螺作用机制可能是由于破坏钉螺体内神经效应与信息分子传递,以及抑制能量供应,最终引起钉螺死亡。其作用机制与氯硝柳 胺相似。

1 江苏省血吸虫病防治研究所

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密达利对湖北钉螺酶组织化学作用的观察

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[目的]观察经密达利(40%四聚乙醛水剂)处理的钉螺组织酶活性变化,探讨密达利 杀螺机制。[方法]取湖北钉螺 60 只,均分 2 组。实验组用 100mg/L 密达利浸泡 2d,取存 活的钉螺,分离完整的软体组织,制作冷冻切片,用酶组织化学方法对乳酸脱氢酶(LDH),琥珀酸脱氢酶(SDH)、细胞色素 C 氧化酶(CCO)、乙酰胆碱酯酶(AChE)和一氧化氮 合酶(NOS)进行染色,用显微图像分析系统定量测定其平均灰度值,每种酶均取 10 只 钉螺组织切片测定其灰度值。同时设未经药物处理的湖北钉螺对照组。[结果]钉螺肝组织、口囊组织的 CCO 灰度值,实验组分别为 0.2042±0.0463 和 0.1695±0.0526,分别低于对照 组的 0.5556±0.0878 和 0.6082±0.0723,两者差异有统计学意义(t=12.26, P<0.01);神经节 的 AChE 灰度值,实验组为 0.2618±0.0330,低于对照组的 0.5100±0.0295,差异有统计学 意义(t=18.72, P<0.01)。口囊、肌纤维中的 LDH 灰度值,实验组分别为 0.5801±0.0982 和 0.4043±0.1091,分别高于对照组的 0.1798±0.0476 和 0.0624±0.0342;咽管的 NOS 灰度值,实验组为 0.3502±0.1310,高于对照组的 0.2139±0.0603,差异有统计学意义(t=3.41,P<0.01)。 肌纤维和口囊的 SDH 灰度值,实验组分别为 0.1835±0.0771 和 0.4649±0.1039,与对照组间 的差异无统计学意义(t=0.51, P>0.05)。[结论] 密达利能抑制钉螺神经传导和能量代谢酶 活性。

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其他

微卫星锚定 PCR 技术研究云南微小按蚊群体遗传结构

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[目的]研究云南不同地理来源微小按蚊的群体遗传结构, 探讨不同群体间的遗传结构 和分化现象。[方法]在云南省东、西、南、北及中部各选择 1~2 个自然村, 用紫外诱蚊灯 于每晚 17 时至次日 7 时诱蚊, 收集雌成蚊以氯仿麻醉, 经形态学鉴别为微小按蚊的样本 取单蚊蚊腿, 再经复合 PCR 方法鉴别微小按蚊 A 或 C。采用微卫星锚定 PCR 技术 (SSR-PCR)扩增微小按蚊单蚊基因组 DNA,用 BIOSIS, RAPDFST, RAPDDIST 及 PHILIP 等软件统计分析基因位点多态性、固定指数 FST 及 θ、种群间的迁移率(Nm)以及遗传 距离、聚类分析构建系统树。[结果]以多态位点比例衡量各种群的遗传多态性, 云南不同 地区微小按蚊均共享较高多态性, 其中元江(C)的变异程度较低, 为 43.3%, 潞西(A) 的变异程度较高, 为 78.6%。FST 和 θ 结果提示, 微小按蚊的遗传变异主要存在于种群内 部。微小按蚊 A 与 C 分别或两者合并分析, Nm 均大于 1。系统树主要分为两支, 元阳(C)、 大关(C) 和勐腊(C) 聚为一支;另一支分为元江(C) 与潞西(A), 新平(A) 和临沧(C), 以及勐腊(A) 共 3 层。[结论]各群体间遗传距离部分与亲缘种分类有关, 未发现与地理 距离相关

1 解放军第二军医大学

2 云南省寄生虫病防治所

我国并殖吸虫病免疫诊断研究进展*

陈韶红 周晓农

在我国,对于并殖吸虫病方面的研究已 76 年,从形态学、流行病学、遗传学、分子 生物学以及免疫诊断等各个方面均取得了较大的进展。但由于并殖吸虫虫种繁多、分布广 泛、临床症状表现复杂多变,因此误诊、漏诊率较高。并殖吸虫病的确诊和疗效考核已成 为流行病学、寄生虫学以及临床工作者的重要难题之一。该文主要就我国并殖吸虫病免疫 诊断方法的研究进展作一综述。

* 科技部自然资源平台项目(2005DKA21104)

"传统"寄生虫学的传承与发展

余森海

寄生虫病研究、防治在中国的发展和对现状的思考 19 世纪末至 20 世纪初,西方若干 著名的热带医学、寄生虫学学者先后来到中国,进行寄生虫调查,其中包括 Patrick Manson, O.T.Logan, Ernest Faust, Norman Stoll 等。在开展调查研究的同时,也为培养中国的寄生

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虫学人才做了有益的工作。

云南省洱源县人体重要寄生虫病调查*

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[目的] 了解云南省洱源县人体重要寄生虫感染的现状和特点,为制定防治对策提供科学依据。[方法] 采用随机抽样法在全县抽取 35 个自然村为调查点,每个调查点随机抽取 35 户居民作为调查对象。对土源性线虫、绦虫和血吸虫感染等采用病原学检查,旋毛虫病、猪囊尾蚴病和血吸虫病采用血清学检查。[结果] 寄生虫总感染率为 23.34%(772/3308),其中坝区与山区人群感染率分别为 19.55%(333/1703)和 27.35%(439/1605),两者差异 有统计学意义(P<0.01)。共查出 7 种寄生虫,感染率分别为蛔虫 15.75%、钩虫 0.33%、鞭虫 1.87%、绦虫(包括链状带绦虫和微小膜壳绦虫) 3.72%、蛲虫 0.18%、血吸虫 1.51%。混合感染人数占总感染人数的 8.94%(69/772)。旋毛虫病、猪囊尾蚴病和血吸虫病的血清 阳性率分别为 57.30%(2103/3670)、18.20%(668/3670)、21.16%(958/3662)。本次调查 结果寄生虫总感染率低于 2004 年全省调查的 28.86%,而高于全国的 19.56%。[结论] 洱源 县山区人群的人体重要寄生虫感染率明显高于坝区。感染虫种以蛔虫为主,其次为绦虫。 绦虫病、猪囊尾蚴病、旋毛虫病和血吸虫病为今后该县寄生虫病防治工作的重点。

3 云南省大理州洱源县血吸虫病防治站

《中国寄生虫学与寄生虫病杂志》5年引文分析

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[目的] 通过对《中国寄生虫学与寄生虫病杂志》2000-2004 年 30 期载文的引文进行统 计分析,以了解本刊著者的引用文献规律及吸收利用信息的能力。[方法] 用文献计量学方 法对该刊 2000-2004 年 30 期 833 篇论文的引文量、引文类型、引文半衰期和普赖斯指数进 行统计分析,用布拉德福定律找出引文核心区域期刊。[结果] 833 篇论文的总引文量 6385 条,引文率从 2000 年的 84.4%上升至 2004 年的 90.5%。5 年中篇均引文平均为 7.7 条。引 文以期刊为主占 88.3%,其中中、外文期刊分别占 34.8%和 65.2%。引用中、外文期刊的 平均半衰期分别为 4.8 年和 6.4 年,平均普赖斯指数分别为 51.8%和 40.3%。所引中、外文 期刊的核心区域期刊:中文 4 种,其引文量占所引中文期刊的 48.1%;外文 12 种,其引文量 占所引外文期刊的 36.9%。[结论] 该刊作者的引文范围广泛,吸收和利用本领域国内外最 新研究动态信息的能力较强。但利用外文文献的新颖性有待于提高。

^{*} 国家自然科学基金重大项目(30590370)

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新型广谱驱虫药氨基苯脒类化合物对感染旋毛虫小鼠的疗效的初步观察

张永年 陈韶红 陈耀青 常正山

[目的]观察氨基苯脒类化合物(代号 9856)对感染旋毛虫小鼠的疗效。[方法]将氨基苯脒类化合物 9856 分为 3 个药物剂量组 10 mg/kg、20 mg/kg 和 30 mg/kg 给感染旋毛虫的实验小鼠喂药,观察药物对小鼠体内旋毛虫的 4 个不同发育期的作用。[结果] 化合物 9856 3 个剂量组对肠道脱囊期幼虫的减虫率均为 100%;对肠道内成虫期, 3 组的减虫率分别为 76%, 91.9%和 97.4%;对移行期幼虫减虫率分别为 65.5%, 74.8%和 92.3%;对肌肉内成囊期幼虫的减虫率为 53.2%, 61.5%和 87.8%。[结论] 化合物 9856 对旋毛虫 4 个发育期都有显著的杀虫效果。

三苯双脒肠溶片治疗 899 例儿童肠道线虫感染的临床观察

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[目的] 评价三苯双脒肠溶片(200mg)治疗 4~14 岁儿童钩虫和蛔虫感染者的安全性和疗效。[方法] 在海南、四川和贵州等 3 个临床试验中心进行三苯双脒肠溶片开放临床试验,受治者用改良加藤法(Kato-Katz) 粪检确诊为钩虫、蛔虫感染,钩虫与蛔虫混合感染或合并鞭虫感染等,共收治 4~14 岁儿童 899 例,采用三苯双脒肠溶片 200mg 单剂口服治疗,观察不良反应,并于治疗后 3~4 周用相同方法作粪检评价治疗效果。[结果] 三苯双脒肠溶片 200mg 对儿童钩虫感染的治愈率及有效率分别为 82.0%(433/528)和 99.2%(524/528);对蛔虫感染的治愈率及有效率分别为 90.1%(576/639)和 99.7%(637/639),而鞭虫感染治愈率仅为 36.8%(112/304)。儿童顿服三苯双脒肠溶片 200mg 的不良反应轻微和短暂,总的不良反应率为 1.6%(14/899),主要为头晕、恶心和呕吐等。血、尿常规, 肝、肾功能和心电图检查未见明显影响。[结论] 三苯双脒肠溶片 200mg 治疗儿童钩虫和蛔虫感染的疗效显著,不良反应率低。

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5 四川省疾病预防控制中心

卫氏并殖吸虫感染循环抗原检测方法的建立与应用

陈韶红 李浩 周晓农

用 CAg-dot-ELISA 法和 CAb-ELISA 法分别对并殖吸虫病临床诊断患者、并殖吸虫病 流行区人群、卫氏并殖吸虫早期感染者及其他寄生虫感染者进行循环抗原和抗体检测。用 62
CAg-dot-ELISA 检测 70 份卫氏并殖吸虫病临床诊断患者血清,阳性 29 份,敏感性为 41.5% (29/70),与华支睾吸虫病和日本血吸虫病患者血清分别有 25% (5/20)和 20% (4/20)的交叉反应,与其他寄生虫感染者血清和健康人血清 (60 份)均为阴性,特异性为 93.6%。 CAb-ELISA 检测 70 例卫氏并殖吸虫病临床诊断患者血清阳性 67 份,敏感性为 95.7% (67/70),与华支睾吸虫病和日本血吸虫病患者血清分别有 25% (5/20)和 20% (4/20)的交叉反应,对其他寄生虫感染者血清和健康人血清的特异性为 92.1%。CAg-dot-ELISA 和 CAb-ELISA 分别检测并殖吸虫病流行区人群 220 份血清,阳性率分别为 0 和 3.2% (7/220)。CAg-dot-ELISA 法对辅助诊断并殖吸虫早期感染有一定价值。

灯诱法监测白蛉的初步试验

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现场观察了3种诱蚊灯诱白蛉的效果,并试验了无光源灯诱和以葡萄糖水作引诱剂的 效果。结果表明,本文试用的3种诱蚊灯所诱的虫种较杂,分拣鉴定的难度较大;无光源诱 蚊灯在白蛉栖息地可以捕获少量白蛉,而且标本较为纯净,葡萄糖水没有明显的诱蛉作用。 目前用于诱蚊的3种诱蚊灯不适合直接用于白蛉监测,建议试用更有效的白蛉诱引剂。

1 甘肃省疾病预防控制中心

应用地理信息系统进行垃圾填埋场选址的初步研究*

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在 ArcGIS 8.3 软件空间分析模块(spatial analysis)支持下,以江苏省长江以南市辖区 为研究对象,进行了空间叠加和空间复合查询分析,以确定垃圾填埋场候选区域分布,并 同已有的垃圾填埋场监测点进行比较,结果表明,利用地理信息系统技术进行垃圾填埋场 辅助分析是可行的。

* 江苏省自然科学基金资助项目(BK2001158)

1 江苏省血吸虫病防治研究所

隐孢子虫牛源分离株的分离和鉴定*

刘海鹏 曹建平 沈玉娟 陈有贵 李小红 卢潍媛 徐馀信 刘宜升 刘述先 周晓农 汤林华

[目的] 分离和鉴定采自徐州自然感染奶牛粪便中的隐孢子虫卵囊。[方法] 在徐州某奶牛场采集经改良抗酸染色镜检确认为隐孢子虫感染的奶牛粪便,用不连续 Sheather's 蔗糖 密度梯度离心法纯化卵囊。采用 Chelex-100 方法提取卵囊基因组 DNA,设计引物扩增小 亚基核糖体 RNA (SSU rRNA) 基因和卵囊囊壁蛋白 (COWP) 基因,分别克隆到 pGEM-T

和 pGEM-T Easy 载体,测定核苷酸序列,运用 BLAST 和 MEGA 软件进行序列同源性和 种系发生分析。[结果] 分离的隐孢子虫卵囊个体大小为(7.4±0.32)μm×(5.4±0.21)μm,长宽比为 1.3±0.07 (n=20)。徐州牛源隐孢子虫与 Gen-Bank 公布的安氏隐孢子虫比较,SSU rRNA 和 COWP 基因序列同源性分别为 100%和 99%。种系发生分析显示该株 隐孢子虫与安氏隐孢子虫处于同一分支。[结论] 由徐州自然感染奶牛粪便中分离获得的隐 孢子虫是安氏隐孢子虫。

* 国家"十五"科技攻关项目(No. 2003BA712A03-06)

1 徐州医学院

寄生虫标本馆——宣传人体寄生虫病防治知识的重要基地

童小妹 常正山 孙惠珍

中国疾病预防控制中心寄生虫病预防控制所是全国寄生虫病预防控制的专业机构,它 承担着国家重大寄生虫病防治应急任务,其中包括健康教育宣传预防寄生虫病的科普知 识。本所下设的人体寄生虫和媒介标本馆(简称人体寄生虫标本馆)2004年10月开馆以 来,受到各级领导和同行的高度重视和和大力支持,标本馆内容、设施几年来得以不断更 新和充实。

对并殖吸虫病患者外周血中嗜酸性粒细胞相关性的初步观察*

陈韶红 李浩 陈家旭 常正山 周晓农

[目的] 了解并殖吸虫感染者痰液检测、血清抗体与外周血中嗜酸性粒细胞之间的关系。[方法] 对并殖吸虫病或疑似并殖吸虫病的患者 89 人,分别进行病原学痰液检测、免疫血清学(DIGFA 和 ELISA)、嗜酸性粒细胞直接计数和分类百分比检测。[结果] 89 例患者中有 47 人痰卵检测阳性,阳性率达到 52.8%,免疫胶体金渗滤法和 ELISA 法阳性率达到 74%,89 人中有 93.2%的人都有不同程度的嗜酸性粒细胞增高。[结论] 肺吸虫感染者的嗜酸性粒细胞增高与感染相关。

* 国家自然科技资源平台项目(2005DKA21104)

安氏隐孢子虫热休克蛋白编码基因的克隆、表达和分析*

刘海鹏 曹建平 李小红 卢潍媛 沈玉娟 徐馀信 臧炜 刘述先

[目的]克隆、表达和分析安氏隐孢子虫 Mr70000 热休克蛋白(CaHSP70)的部分编码 基因。[方法]依据公布的 CaHSP70 基因序列设计引物,以江苏徐州安氏隐孢子虫(XZ-BOV)

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总 RNA 为模板,反转录 PCR (RT-PCR) 扩增目的编码基因。PCR 产物经 TA 克隆后,亚 克隆入 pET28a 原核表达载体,构建重组质粒 pET28a-CaHSP70,转化感受态大肠埃希菌 BL21 (DE3),异丙基-β-D-硫代半乳糖苷 (IPTG)诱导表达并获得纯化的重组蛋白 (简称 为 rCaHSP70)。用十二烷基磺酸钠-聚丙烯酰胺凝胶电泳(SDS-PAGE)、蛋白质印迹(Western blotting)和 ELISA 对该重组蛋白进行分析和鉴定。采用相关生物信息学软件对序列进行 分析。[结果]根据克隆的目的基因序列推导的氨基酸序列与 GenBank 登录的 CaHSP70 一 致。SDS-PAGE 和 Western blotting 分析显示,重组蛋白 (rCaHSP70) Mr 约为 43000 (含 6 个组氨酸),以包涵体的形式存在,可被辣根过氧化物酶标记的抗组氨酸抗体、安氏隐孢 子虫感染的小鼠血清、微小隐孢子虫感染的儿童血清和 rCaHSP70 免疫小鼠血清识别。 rCaHSP70 存在多个功能位点和潜在的抗原决定簇。种系发生分析表明 XZ-BOV 与安氏隐 孢子虫进化关系最近。ELISA 检测结果表明,rCaHSP70 免疫的 C57BL/6 小鼠与 BALB/c 小鼠血清特异性抗体滴度均显著高于免疫前。[结论]XZ-BOVHSP70 部分编码基因的克隆 获得成功,研究获得的重组蛋白具有一定的免疫原性和免疫反应性。

*国家"十五"科技攻关项目(No. 2003BA712A03-06)

部分国产烤烟型卷烟烟气冷凝物的中性红细胞毒性试验*

王琴美 兰勤娴 吴嘉彤 郑赛晶1金永明1相丽珍 钱颖骏

采用中性红法检测了 20 个牌号的国产烤烟型卷烟烟气冷凝物(TPM)对中国仓鼠肺 上皮细胞(CHL)的细胞毒性,结果表明:①阳性对照化合物氯喹的 IC50 为 15.0±0.23µg/mL, 而 20 个牌号卷烟 TPM 的 IC50 为 119.5±13.6~218.4±15.9µg/mL; ②盒标焦油 15mg/支卷烟 TPM 对 CHL 的细胞毒性显著高于 11mg/支卷烟,极显著高于 10、9、8、5mg/支卷烟; ③ 卷烟的 TPM 与其对 CHL 的 IC50 负相关。

* 上海烟草(集团)公司资助项目"建立烟气生物毒理试验系统"(No.04110)

1 上海烟草(集团)公司技术中心

对并殖吸虫病患者外周血中嗜酸性粒细胞相关性的初步观察*

陈韶红 李浩 陈家旭 常正山 周晓农

[目的] 了解并殖吸虫感染者痰液检测、血清抗体与外周血中嗜酸性粒细胞之间的关系。[方法] 对并殖吸虫病或疑似并殖吸虫病的患者 89 人,分别进行病原学痰液检测、免疫血清学(DIGFA 和 ELISA)、嗜酸性粒细胞直接计数和分类百分比检测。[结果] 89 例患者中有 47 人痰卵检测阳性,阳性率达到 52.8%,免疫胶体金渗滤法和 ELISA 法阳性率达到 74%,89 人中有 93.2%的人都有不同程度的嗜酸性粒细胞增高。[结论] 肺吸虫感染者的嗜酸性粒细胞增高与感染相关。

* 国家自然科技资源平台项目(2005DKA21104)

人芽囊原虫的致病性与遗传多样性研究进展

李兰花 周晓农

人芽囊原虫是否具有致病性一直颇有争议,无论是流行病学研究还是实验动物研究均 存在相互矛盾的结论。研究发现,人芽囊原虫具有广泛的遗传多样性,近年来,研究者用 各种方法对此进行了研究。他们将人芽囊原虫分成不同的种群,并尝试探讨其遗传多样性 与致病性的关系。该文就人芽囊原虫的致病性、遗传多样性及两者关系的研究进展进行了 综述。

卫氏并殖吸虫感染犬循环抗原和特异性抗体的动态观察

陈韶红 周晓农 张永年 陈家旭

[目的]观察人工感染卫氏并殖吸虫的犬血清中特异性抗体和循环抗原的动态变化。 [方法] 按常规方法从阳性溪蟹中分离卫氏并殖吸虫囊蚴并定量感染家犬,从感染后 d4 开 始采血分离血清,用多抗 dot-ELISA 法检测犬血中循环抗原 (CAg),观察从 d4 到 d133 之间感染犬血中循环抗原 (CAg)及对感染卫氏并殖吸虫 2 个月的犬用吡喹酮治疗前后血 清循环抗原 (CAg)的动态变化。用 ELISA 法检测从感染 2w 至 19w 不同间隔时间内犬血 清中特异性抗体 (Ab)的动态变化。[结果] 人工感染卫氏并殖吸虫的家犬,有 2 只犬在 感染 d6 时有循环抗原出现,d10 6 只感染犬都能检测到循环抗原,检出稀释度在 1:8~1: 128 之间,到感染后 14d 时,稀释度最高可达到 1:256,并一直维持到 34d,56d 以后逐 渐下降,到 84d 下降至零。对感染卫氏并殖吸虫的犬用吡喹酮治疗 3d 后,其循环抗原有 短暂出现上升的趋势,但在 6d 后逐渐下降并消失。感染犬在 4 周时可检测到特异性抗体, 抗体最高滴度维持时间为 4 周~12 周,并一直维持在一个较高的水平上。[结论] 犬在感 染卫氏并殖吸虫后的 10~56d 内,用多抗 dot-ELISA 法可在其血清中检测到循环抗原 (CAg),得出在这段时间检测循环抗原具有早期诊断价值。但感染犬在用吡喹酮药物治 疗后有短暂的循环抗原出现,一周后逐渐消失。

§ 4. ABSTRACTS OF RESEARCH ARTICLES

SCHISTOSOMIASIS

CLONING AND EXPRESSION OF GENE ENCODING MYOPHILIN-LIKE PROTEIN OF SCHISTOSOMA JAPONICUM AND STUDY ON THE ANTIGENICITY OF RECOMBINANT PROTEIN*

TONG Qun-bo LIU Shu-xian LI Xiao-hong XU Yu-xin SHEN Yu-juan CAO Jian-ping

[Objective] To clone and express the gene encoding Schistosoma japonicum myophilin-like protein (SjcMLP) and to study the antigenicity of the recombinant protein. [Methods] The SjcMLP gene was amplified by PCR. The PCR product was cloned into T vector, and then subcloned into expression vector pQE30. The recombinant plasmid of pQE30-SjcMLP was transformed into E.coli M15, and induced with IPTG for expression. The bacterial lysis was conducted by ultrasonication and the supernatant was analysed by SDS-PAGE. The recombinant protein (reSjcMLP) was purified with the Ni-NTA resin, and analysed with SDS-PAGE and Western blot. The titers of sera from C57BL/6 mice immunized subcutaneously with reSjcMLP were detected by ELISA. [Results] The results of SDS-PAGE and Western blot showed that the molecular weight of expressed fusion protein was around 24.8 kDa and was recognized by the sera from the mice infected with Schistosoma Japonicum. The purified protein of reSjcMLP was coated for ELISA test and the IgGtiters in the sera from the mice immunized with reSjcMLP were as high as 1: 12 800 reacted with. However, no significant difference was found in worm reduction rates between the immunized mice and control mice. [Conclusions] The fused recombinant protein of reSjcMLP is successfully expressed and purified. The recombinant protein in this experiment fails to induce significant protection against the challenge in fection in C57BL/6 mice.

EFFECTIVENESS OF ROUTINELY USED ASSAYS FOR THE DIAGNOSIS OF SCHISTOSOMIASIS JAPONICA IN THE FIELD*

XU Jing CHEN Nian-gao¹ FENG Ting WANG En-mu² WU Xiao-hua CHEN Hong-gen¹ WANG Tian-ping² ZHOU Xiao-nong ZHENG Jiang

[Objective] To evaluate the effectiveness of routinely used assays for schistosomiasis diagnosis in the field. **[Methods]** From late November to early December 2005, 6-65 years old

^{*} Supported by the National Science Foundation of China (30371262); 863 National Key Project (2006AA02Z444, 2004AA215240, 2004AA2Z3520); the Key Science and Technology Project of the Tenth Five-Year Plan of Shanghai (03DZ19231); Biological Medicine Key Science and Technology Research Project (064319026)

inhabitants from 3 endemic villages were examined by Kato-Katz technique (3 thick smears) and nylon bag sedimentation/hatching method. At the same time, dipstick dye immunoassay (DDIA), fast enzyme linked immunosorbent assay (F-ELISA), indirect haemagglutination test A (IHA-A) and B (IHA-B) were carried out in parallel. [Results] 1 864 people were examined by stool examination with an average positive rate of 9.7%. The missing rate of DDIA was relatively stable in medium and heavily endemic areas of schistoso-miasis. The missing rate of nylon bag sedimentation/hatching method was 25% and relatively stable when the number of eggs per gram of feces (EPG) was larger than 100. The average positive rate of DDIA, F-ELISA, IHA-A and IHA-B was 47.8%, 50.0%, 66.3% and 40.1% respectively. Using stool examination as the gold standard, the sensitivity of DDIA, F-ELISA, IHA-A and IHA-B was 75.3%, 65.8%, 85.6% and 76.0%; and the specificity was 55.1%, 51.7%, 35.7% and 63.6%, respectively. Among the four sero-diagnostics, the specificity, Youden index, positive likelihood rate and coincidence of IHA-B were the highest. [Conclusion] Kato-Katz method is more stable and effective than nylon bag sedimentation/hatching method in medium and heavily endemic areas of schistosomiasis japonica. The sensitivity and spec-ificity of these four diagnosis kits are lower than 90%.

* Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China (No. 2004BA718B12)

CLONING AND EXPRESSION OF THE GENE ENCODING SCHISTOSOMA JAPONICUM GLYCERALDEHYDE-3-PHOSPHATE DEHYDROGENASE*

Wang Wen-qin¹ Li Xiao-hong Liu Shu-xian Song Guang-cheng Xu Yu-xin Cao Jian-ping

[Objective] To clone and express the gene encoding Schistosoma japonicum (Chinese strain) Glyceraldehyde-3-phosphate dehydrogenase (SjcGAPDH) and predict the protein structure and antigen determinants. **[Methods]** After digestion of pBluescript-SjcGAPDH with Xho I and Sac I, the target DNA fragment was purified and subcloned into the proper prokaryotic expression vector pET28b.After identification of sequencing, the recombinant plasmid pET28a-SjcGAPDH was transformed into competent E.coli BL21 and expressed in the presence of isopropyl-β-D-thiogalactopyranoside (IPTG).**[Results]** The results of SDS-PAGE showed that the molecular weight of expressed protein was around 42.7 kDa. The recombinant protein was recognized by Western blot with the sera from rabbits immunized with attenuated cercariae of S.japonicum. According to the prediction, the N-terminal No.50-70, 102-122, 135-148, 165-175,187-205,254-272,278-285 may be antigen determinants. **[Conclusion]** The gene encoding SjcGAPDH has been coloned and expressed successfully, which will be helpful for identification of its function and antigenicity.

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* Supported by the National Science Foundation of China (30371262); 863 National Key Project (2006AA02Z444, 2004AA215240, 2004AA2Z3520); the Key Science and Technology Project of the Tenth Five-Year Plan of Shanghai (03DZ19231); Biological Medicine Key Science and Technology Research Project (064319026) 1 School of Medicine; Huzhou University

TISSUE REACTIONS TO SCHISTOSOMULA IN C57BL/6 MICE IMMUNIZED WITH SJC97 DNA VACCINE AFTER CHALLENGED WITH CERCARIAE OF SCHISTOSOMA JAPONICUM*

CHEN Jia-xu LIU Shu-xian CAO Jian-ping SONG Guang-cheng XU Yu-xin

[Objective] To observe tissue reactions of skin and lung of mice immunized with Sjc97 DNA vaccine after challenged with cercariae of Schistosoma japonicum. [Methods] One hundred and five mice of C57BL/6 were divided into three groups, Sic97 DNA group, blank plasmid group and infection control group, and 35 mice each group. The mice of the Sjc97 DNA group were vaccinated intramuscularly with Sjc97 DNA nucleic acid vaccine twice at an interval of 3 weeks, and then challenged with (800±50) cercariae of Schistosoma japonicum per mouse three weeks after final DNA boosting. The mice in the control groups, i. e. the blank plasmid and the infection control groups, were challenged with the same number of cercariae after vaccinating with plasmid or with nothing. Local skin and lung samples from the mice of each group were taken at certain time points from 6 to 120 hours after the infection for pathological observation. [Results] The skin inflammation in Sjc97 DNA immunized mice (Sjc97 DNA group) post-challenge infection appeared early, and the cellular reactions against schistosomula in the skin tissues were acute and persistent, in which the percent age of eosinophils was high. However, in two control groups, the blank plasmid group and infection control group, the skin inflammation emerged lately, and the cellular reactions against schistosomula were weaker than those in Sjc97 DNA group. The bleeding speckles on the lung's surface of C57BL/6 mice immunized with Sic97 DNA vaccine post-challenge infection appeared lately at 72 h after the challenge. In contrast, the bleed spots appeared early by 48 h after the infection in the blank plasmid group and infection control group. From 72 h to 120 h after the challenge infection, pulmonary inflammation was obvious, granulomas formed, but the most walls of pulmonary alveolus were normal in mice immunized with Sjc97 DNA vaccine. However, in two control groups, the pulmonary inflammation was weak but there were a lot of red blood cells seeping into the pulmonary alveolus walls. [Conclusion] Sic97 DNA vaccine increases cellular immune response of the host and enhances the role of killing schistosomula.

^{* 863} National Key Project (2001AA215151)

INVESTIGATION OF INFECTION TIME OF SCHISTOSOMIASIS JAPONICA WITH ANTIBODY DIFFERENCE RATIO METHOD

GUO Jian YAN Zi-zhu WU Ying YU Qing BAO Zi-ping BAO Yi-fang YANG Yue-tao QIAN Cui-zhen XU Jing HU Shao-liang¹ GUO Jia-gang

[Objective] To investigate the feasibility of antibody difference ratio method for prediction of infection time of schistosomiasis japonica. **[Methods]** The antibody difference ratio was calculated based on the values of specific IgM and IgG antibodies in sera from infected mice and acute schistosomiasis patients. The infection time of acute schistosomiasis patients was assessed with their epidemiology data, and circulating antigens in sera and fractionated antigens of soluble eggs antigen (SEA) were analyzed as indirect evidences. **[Results]** All acute schistosomiasis patients could be devided into two groups according to the difference ratio of IgM-ELISA over IgG-ELISA. The average infection time of the first group with difference ratio of more than 0.61 was about four to five weeks, while that of the second group with difference ratio of less than 0.61 was more than seven to eight weeks. **[Conclusion]** It was feasible to predict the infection time of acute schistosomiasis patients with antibody difference ratio method.

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CLONING AND FUSION EXPRESSION OF ADENOSINE DEAMINASE OF SCHISTOSOMA JAPONICUM*

YANG Zhong¹ XU Bin WANG Wei¹ FENG Zheng WEI Dong-zhi¹ HU Wei

[Objective] To clone and express a new protein adenosine deaminase of *Schistosoma japonicum* (SjADA). **[Method]** Specific primers were designed according to the EST sequence and used for amplification of the encoding sequence from the cDNA clone containing SjADA. The gene was sub-cloned into pET32 plasmid and expressed in E.coli BL31 (DE) pLys strain and the recombinant proteins were purified by chelating sepharose FF. The structure and phylifunctions of this protein were analyzed by MrBayes and GeneAtlas. **[Result]** The full length sequence of SjADA gene was obtained and the recombinant protein was cloned, expressed and purified successfully. The bioinformatics analysis showed that the identity of SjADA and SmADA gene sequence was only 25% and they belonged to different subfamily. The structure of SjADA had 41% identity with it's PDB template 1A4M. **[Conclusion]** The recombinant protein of S*.japonicum* may be different with that of *S.mansoni*.

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China (No. 04QMX1455)

1 State Key Laboratory of Bioreactor Engineering, New World Institute of Biotechnology, East China University of Science and Technology

EVALUATION OF TWO TESTS FOR DETECTING SCHISTOSOMA JAPONICUM INFECTION USING A BAYESIAN APPROACH*

WANG Xian-hong ZHOU Xiao-nong LI Yuan-lin¹ LV Shan LI Lan-hua JIA Tie-wu CHEN Shao-rong¹ YANG Zhong¹ FANG Wen¹ CHEN Feng¹

[Objective] To explore a novel approach to estimate the sensitivities and specificities of two tests, i.e., ELISA and Kato-Katz, for detecting *schistosoma japonicum* infection when used in the field. **[Methods]** A Bayesian approach was employed to evaluate the characteristics of the two tests when used in endemic and non-endemic areas, respectively, based on the data from the field investigation in Eryuan county of Yunnan province, 2005. **[Results]** In endemic areas, a high sensitivity with the median of 0.913 and a low specificity with the median of 0.584 preserited in ELISA, and a low sensitivity with the median of 0.148 along with a very high specificity (0.994) appeared in Kato-Katz. In non-endemic areas, a moderate sensitivity of 0.766 with a high specmetity (0.908) was showed in ELISA, and the sensitivity and specificity of Kato-Katz was similar to that in endemic areas, respectively. **[Conclusion]** The Bayesian approach can evaluate the test pmpenies appropriately when there is no gold standard.

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1 The Institute of Research and Control on Schistosomiasis in Dali State

POTENTIAL RISKS FOR TRANSMISSION OF SCHISTOSOMIASIS CAUSED BY MOBILE POPULATION IN SHANGHAI

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JIN Yan-jun¹ WU Xiao-hua WANG Xian-hong WANG Long-ying¹ LIN Tao²
SHEN Wei-guo³ LU Jing-qing² DAI Jing

[Objective] To understand the potential risk for schistosomiasis transmission caused by introduction of infection source from mobile population in Shanghai. **[Methods]** Field investigation was conducted in the suburb of Shanghai City by screening the mobile population living in Shanghai for more than 1 month and over 1 year old in a procedure of interviewing, serum indirect hemagglutination (IHA) test, and then fecal examination to detect the eggs with nylon sedimentation approach for those IHA positives. **[Results]** Among 2 931 mobile people investigated, 1 575 were male (53.74%) and 1 356 were female (46.26%); 138 out of 2 931 were positive in IHA test (4.71%). 1 938 (66.12%) out of 2 931 came from *Schistosoma japonicum*-endemic provinces and its positive rate in mobile population (5.99%) was significantly higher than those from the transmission-interrupted provinces (2.6%) (χ 2=10.28,

P<0.01), and those from non-endemic provinces (1.68%) ($\chi 2=12.86$, P<0.01). The 138 IHA positives all showed negative in fecal examination. In accordance with the serum positive rate and egg-infection rate in the national reporting system in 2004, it was estimated that there would be about 13 356 and 1 699 potential serum positive cases respectively from endemic area and transmission controlled area, and about 2 168 and 255 egg-positive cases from the two kind areas respectively, majority of the cases were from Anhui Province. [Conclusion] Schistosomiasis transmission risks potentially exist in Shanghai suburb due to the introduction of infected mobile people from other endemic provinces, and a surveillance system and quick response are needed for the possible re-emergence of the disease.

CLONING AND EXPRESSION OF THE GENE ENCODING HYPOXANTHINE-GUANINE PHOSPHORIBOSYLTRANSFERASE OF SCHISTOSOMA JAPONICUM*

Shen Yu-juan¹ Xia Chao-ming¹ Cao Jian-ping Xu Yu-xin Li Xiao-hong Liu Hai-peng Lu Wei-yuan Liu Shu-xian

[Objective] To perform the cloning of the gene encoding Schistosoma japonicum Chinese-strain hypoxanthine-guanine phosphoribosyltransferase (HGPRT) and its expression in Escherichia coli. [Methods] A couple of primers were designed with the BamHI restriction endonuclease site introduced in forward primer and SalI in reverse primer. Total RNA was isolated from adult worms of S. japonicum Chinese-strain (Anhui-strain, Sjc-A) and the SjcHGPRT gene was amplified by reverse transcriptase-polymerase chain reaction (RT-PCR). The PCR product and the prokaryotic expression vector pET28a were digested by both restriction endonucleases BamHI and SalI. The target DNA fragments were purified and cloned properly into pET28a.After identification by en-donucleases digestion, PCR and sequencing, the recombinant plasmid pET28a-SjcHG PRT was transformed into competent E.coli BL21 and expressed in the presence of IPTG. [Results] pET28a-SiHGPRT was sequenced and shown to be 99% and 83% identical in deduced amino acid sequence to that of S. japonicum Chinese-strain (Hunan-strain, Sjc-H) and S.mansoni HGPRT, respectively. The results of SDS-PAGE and Western blot revealed that the molecular weight of expressed protein was around 30 kDa and could be recognized by anti-His-G-HPR antibody and sera from mice and human with schistosomasis japonica. [Conclusion] The recombinant plasmid containing SjcHGPRT cDNA is successfully constructed and its expression protein (reSjcHGPRT) is also successfully purified.

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CLONING, EXPRESSION OF SCHISTOSOMA JAPONICUM ELASTASE GENE AND ITS STAGE-SPECIFIC TRANSCRIPTION*

HUANG Cheng-yu¹ LU Yan WANG Wei¹ JU Chuan FENG Zheng YANG Zhong¹ WANG Sheng-yue² HU Wei

[Objective] To clone, express and purify *Schistosoma japonicum* elastase-2b gene (SjCE-2b), and analyze its stage-specific transcription. and expression. **[Methods]** The coding sequence of the Sj gene was predicted, and a phylogenetic tree of Sj elastase was drawn. RT-PCR and Western blot were used to investigate the differential transcription and expression of SjCE-2b gene during the developmental stages. The SjCE-2b gene obtained by RT-PCR was subcloned into pET28b, and expressed in E.coli (rSjCE-2b). The expressed protein was purified with His Tag affinity chromatography. Western blotting was used to investigate the immunogenicity. **[Results]** RT-PCR showed specific bands in sporocysts, eggs and adult worms, while Western blot showed that the recombinant protein(rSjCE-2b) existed only in cercariae and sporosysts, with Mr 31 000. The expression vector of SjCE-2b/pET28b was constructed and expressed in E. coli. The recombinant protein rSjCE-2b was specifically recognized by the *S. japonicum*-infected rabbit serum. **[Conclusion]** The transcript of *S.japonicum* elastase-2b gene was found in sporocysts, eggs and adult worms, and this gene might be a potential candidate for vaccine, for drug and diagnosis target.

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COST-EFFECTIVENESS ANALYSIS ON SCREENING FOR SURVEILLANCE OF SCHISTOSOMIASIS AMONG POPULATION IN TRANSMISSION INTERRUPTED AREAS

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[Objective] To analyze the relationship between cost and effectiveness on screening and treatment for schistosomiasis among population in areas of transmission interrupted for surveillance and consolidation of schistosomiasis control, and explore the reasonable allocation between the strategies for active surveillance and passive surveillance. **[Methods]** Retrospective survey and review of historical literature were carried out to analyze the cost and effectiveness for screening and treatment of schistosomiasis among population for surveillance in transmission

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interrupted areas in the provinces of Zhejiang and Guangdong and the Guangxi Zhuang Autonomous Region during the period of 2003-2005. [Results] From 2003 to 2005, the total cost for active surveillance and treatment, and average cost per year were the highest, i.e., 6798.2 thousand Yuan and 2266.1 thousand Yuan respectively in Zhejiang Province, whereas the costs in Guangxi Zhuang Autonomous Region the lowest, being 83.9 thousand Yuan and 28.0 thousand Yuan respectively. For passive surveillance and treatment, the costs in Zhejiang Province were also the highest, being 5.9 thousand Yuan and 2.0 thousand Yuan respectively, whereas the costs in Guangxi Zhuang Autonomous Region the lowest, being 1.8 thousand Yuan and 0.6 thousand Yuan respectively. The average cost for screening and treatment of one case for active surveillance was the highest in Guangdong Province, being 172.3 thousand Yuan whereas the average cost in Guangxi Zhuang Autonomous Region the lowest, 83.9 thousand Yuan. Among the passive surveillance, the cost in Guangdong Province was the highest, 0.6 thousand Yuan, whereas the cost in Zhejiang Province the lowest, 0.2 thousand Yuan. In addition, the average cost of serological examination per person among population was the highest in Guangdong Province, whereas it was the lowest in Guangxi Zhuang Autonomous Region. The average cost of fecal examination per person was the highest in Zhejiang Province whereas it was the lowest in Guangxi Zhuang Autonomous Region. [Conclusions] In areas where the transmission of schistosomiasis is interrupted, the input for surveillance, screening and treatment is different, so the choice of control strategies for active and passive surveillance needs to be explored in depth with a view of using the minimum input and acquiring the maximum control efficacy.

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BASELINE STUDY ON THE CHARACTERISTICS OF ANTIBODY LEVEL AGAINST SCHISTOSOMA JAPONICUM IN THE THREE GORGES RESERVOIR AREAS

LUO Xing-jian¹ WU Cheng-guo¹ ZHOU Xiao-nong XIAO Bang-zhong¹ CHEN Wei¹

[Objective] To analyze the baseline study on the characteristic of anti-schistosome antibody and the risk factors of infection with *S.japonicum* in local inhabitants in the Three Gorges Reservoir areas (TGR). **[Methods]** The local inhabitants in Wanzhou district of the middle part of TGR were investigated. Each case was interviewed and $2\sim3$ ml of blood sample was collected for the detection of anti-schistosome antibody level by ELISA. **[Results]** 633 people were investigated. The Geometric Mean of OD value (OD-value) of anti-schistosome antibody level was 0.0145 and the positive rate was 3.32%(21/633). The OD-value of male was 0.014 and the positive rate was 3.103%. The OD-value of female was 0.015 and the positive rate

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was 3.499%. The OD-value (t=0.543, P=0.587) and positive rate (X2=0.076, P=0.782) had no significant difference between male and female. The highest OD-value was in the age group of over 70 years(0.0252) and the lowest was in the age group $10 \sim 19$ years(0.0058). The OD value was correlated with age(r=0.224, P=0.000). The OD-value of students was lower than that of housewives (P=0.0000), the farmer (P=0.0000) and the worker (P=0.0000). There was significant difference in OD-value among people with different education background (r=0.199, P=0.000). There was a tendency on OD-value declining with education level. The curve of full frequency distribution of antibody level was an "L" figure. The proportion of OD value under 0.03 was 63.8%. The proportion under 0.07 was 91.3%. The results from the multivariate stepwise regression analysis indicated that there was significant difference with antibody level between different occupations (t=2.322, P=0.021) and different annual income (t=-2.272, P=0.024). [Conclusion] The antibody level against *S. japonicum* infection in the TGR was low which is same as the level of population in non-endemic region. The potential social-behavior factors may affect schistosomiasis transmission. So the monitoring system of schistosomiasis should be improved and health education should be carried out in key populations to prevent infection from S. japonicum in the TGR.

1 Center for Disease Control and Prevention of Chongqing

SURVEILLANCE ON SCHISTOSOMIASIS IN CHINA IN 2006

ZHU Rong DANG Hui GUO Jia-gang

[Objective] To understand the endemic situation of schistosomiasis among 80 national surveillance sites for schistosomiasis in 2006, so as to provide scientific evidence for making out schistosomiasis prevention and control measures. [Methods] According to the national surveillance protocol, the endemic situation of schistosomiasis in residents and livestock, and the status of Oncomelania snails and other factors were investigated in the 80 national surveillance sites for schistosomiasis, and all the data were collected and analysed. [Results] Among the 80 national surveillance sites, the average positive rate of residents with sera examination was 13.60% and the average positive rate with stool examination was 1.59%. The average positive rate of floating population with sera examination was 5.79%. There were 143 advanced patients among the national surveillance sites, and 12 acute patients were reported in 2006, but no breaking-out epidemic reported. The proportion of domestic animals stable breeding were about 4.74% of 5 365 examined animals in 2006, and the others were not. The infection rate of domestic animals was 5.93% that declined by 34.49% compared with that in 2005 and especially for the infection rate of cattle and sheep. A total of 7 429.63 hm2 of areas were surveyed. The areas of snail habitats, infected snail habitats and the new snail habitats were 4 994.01,621.75 hm2 and 21.75 hm2, respectively. The density of living snails and infection rate of snails were

0.544 8/0.1 m2 and 0.37%, which increased compared with infection rate of 0.26% in 2005. **[Conclusion]** The endemic situation of residents, cattle and snail habitats declined in 2006 compared with those in 2005 in the national surveillance sites.

BIOINFORMATIC IDENTIFICATION AND ANALYSIS OF SCHISTOSOMA JAPONICUM ADENINE PHOSPHORIBOSYLTRANSFERASE*

YANG Zhong¹ HU Wei SU Jin² MA Li² LI Yi-xue³ FENG Zheng WEI Dong-zhi

[Objective] To identify adenine phosphoribosyltransferases in *Schistosoma japonicum* and analyze their structural features. **[Methods]** Based on the accessible transcriptome and proteomic data, the *S.japonicum* adenine phosphoribosyl transferases were identified using bioinformatics approaches including bi-directional homology comparison, domain search and phylogenetic analysis. Homology modeling was also performed to describe the structural features of the proteins. **[Results]** and **[Conclusion]** Two homologue sequences of adenine phosphoribosyltransferase were obtained from *S.japonicum*, and the EST abundance, physico-chemical properties and three-dimensional structures of them were also acquired.

- * Supported by the National Science Foundation of China (30570429)
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- 2 Institute of Molecular Immunology, School of Biotechnology, Southern Medical University

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PROPORTION ANALYSIS ON THE SAMPLING OF THE SECOND AND THIRD NATION WIDE EPIDEMIOLOGICAL SURVEY FOR SCHISTOSOMIASIS IN THE ENDEMIC AREAS

DANG Hui WANG Qiang ZHOU Xiao-nong GUO Jia-gang WU Xiao-hua

[Objective] To find out the differences between the two national sampling surveys for schistosomiasis in the endemic areas, make foundation for inferring infected persons and infection rates, provide reference for later epidemiological survey. **[Methods]** Comparison between persons with stool examination results in the second epidemiological survey and those with serological test results in the third epidemiological survey was made in terms of different endemic types, age, sex, and occupational proportion. **[Results]** No significant differences were found in the proportion of the endemic areas in the provinces between the two sampling surveys ($\chi 2=3.06$, P=0.08). The proportion of persons undergoing the surveys had some changes. The differences of constituent in endemic types, age and occupation were significant (P<0.01). **[Conclusion]** Some differences were found in the proportion of endemic types, age and occupation between the second and third nation-wide epidemiological surveys in schistosomiasis

endemic areas. The difference might be caused by the different survey methods and survey subjects, and any bias might be produced by the objective reason with less survey samples. The epidemiological survey can reach a relatively accurate conclusion only when an extended population data are collected, and in the meantime bias produced by different population proportion is fully estimated.

ANALYSIS ON SOLUBLE ANTIGEN AND ITS FRACTION ANTIGEN OF SCHISTOSOMA JAPONICUM ADULT AND EGG*

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[Objective] To explore the characteristics of soluble male adult worm antigens (AWA-m), female adult worm antigens (AWA-f), egg antigens (SEA) and their fraction antigens of Schistosomia japonicum. [Methods] The fraction antigens were isolated from AWA-m, AWA-f and SEA on DE22 cellulose column, analyzed by means of SDS-PAGE and western blot (WB). [**Results**] The three types of fraction antigens could be obtained from AWA-m, AWA-f and SEA on DE22 cellulose column. AWA-m and its fraction antigens were separated into 19 and 9 distinct bands in SDS-PAGE gel and revealed 8 and 6 immune bands on western blot respectively. AWA-f and its fraction antigens were separated into 15 and 8 distinct bands in SDS-PAGE gel and displayed 9 immune bands on WB. Most of AWA-m and AWA-f protein bands were similar, but Mr 37 000 and Mr 28 000 and Mr 25 000 bands were only appeared in AWA and Mr 26 500 band was seen in AWA-f. SEA and its fraction antigens were separated into 18 and 11 distinct bands respectively in SDS-PAGE gel and showed 13 and 9 immune reaction bands on WB. [Conclusion] The results suggest that our method for obtaining fraction antigens is simple and reliable by purifying AWA-m, AWA-f and SEA with DE22 cellulose. The fraction antigens contained the main immune components of crude soluble antigens and wiped out the major proteins irrespective with immune reaction of Schistosoma japonicum.

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STUDY ON THE RISK FACTORS OF SCHISTOSOMIASIS TRANSMISSION IN THE THREE GORGES RESERVOIR AREAS II INFLUENCE OF THE SOCIOECONOMIC DEVELOPMENT ON SCHISTOSOMIASIS TRANSMISSION*

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[Objective] To understand the impacts of socioeconomic development on schistosomiasis transmission in the Three Gorges Reservoir Areas(TGRA).[Methods] Approaches including epidemiology, immunology and socio-medical survey were applied to investigate the potential risk factors which would involve the importation of infectious resources of the mobile and migrant population, and livestock, and the import of Oncomelania snails, and to explore the potential impact of the socioeconomic development on schistosomiasis transmission in the reservoir areas. [Results] It is possible that snail and animal infectious resources will be introduced into TGRA by importing flowers, trees and livestock. Among the migrant population in the survey,31.43% had infected with schistosomiasis,37.27% had contacted with the infested water, and the positive rate of immunology tests was 1.18%. The migrant population will be the mainly infection source. Orange industry, travel industry, animal husbandry and fishery will develop preferentially in the future of TGRA. However, the development of animal husbandry, fishery and travel industry will increase the risk of the import of infection source and snails to TGRA. [Conclusions] TGRA would become a potential schistosomiasis endemic area since the changes of socioeconomic condition. We should insist on the surveillance and supervising to prevent the transmission of schistosomiasis in TGRA.

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STRATEGY FORMULATION FOR SCHISTOSOMIASIS JAPONICA CONTROL IN DIFFERENT ENVIRONMENTAL SETTINGS SUPPORTED BY SPATIAL ANALYSIS: A CASE STUDY FROM CHINA

CHEN Zhao ZHOU Xiao-nong YANG Kun WANG Xian-hong YAO Zhen-qi¹ WANG Tian-ping² YANG Guo-jing³ YANG Ying-jing¹ ZHANG Shi-qing² WANG Jian JIA Tie-wu WU Xiao-hua

With the aim of exploring the usefulness of spatial analysis in the formulation of a strategy for schistosomiasis japonica control in different environmental settings, a population-based database was established in Dangtu County, China. This database, containing the human prevalence of schistosomiasis at the village level from 2001 to 2004, was analyzed by directional 78

trend analysis supported with ArcGIS 9.0 to select the optimum predictive approach. Based on the approach selected, different strata of prevalence were classified and the spatial distribution of human infection with Schistosoma japonicum was estimated. The second-order ordinary kriging approach of spatial analysis was found to be optimal for prediction of human prevalence of S. japonicum infection. The mean prediction error was close to 0 and the root-mean-square standardized error was close to 1. Starting with the different environmental settings for each stratum of transmission, four areas were classified according to human prevalence, and different strategies to control transmission of schistosomiasis were put forward. We conclude that the approach to use spatial analysis as a tool to predict the spatial distribution of human prevalence of S. japonicum infection improves the formulation of strategies for schistosomiasis control in different environmental settings at the county level.

EFFECT OF TEMPERATURE ON THE DEVELOPMENT OF SCHISTOSOMA JAPONICUM WITHIN ONCOMELANIA HUPENSIS, AND HIBERNATION OF O. HUPENSIS

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The objectives of this investigation were to assess the effect of temperature on the development of Schistosoma japonicum harboured in Oncomelania hupensis and to determine the lowest temperature threshold at which the hibernation of O. hupensis occurs. In the first experiment, adult infection-free O. hupensis, collected from Jiangsu province in eastern China, were infected with S. japonicum miracidia and raised at different temperatures under laboratory conditions. The development of miracidia until the release of cercariae was monitored employing the cercarial shedding method. In the second experiment, batches of O. hupensis were kept at temperatures below 13 degrees C with the temperature gradually reduced. Snail activity was assessed by a pin puncture method. We found a positive relationship between the development of S. japonicum within O. hupensis and temperature. In snails kept at 15.3 degrees C, S. japonicum arrested their development, while the fastest development occurred at 30 degrees C. Our results underscore the pivotal role temperature plays on the biological activity of O. hupensis and the development of S. japonicum within the intermediate host. These findings are likely to have implications for the transmission of schistosomiasis in a warmer future China.

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SPATIAL RISK PROFILING OF SCHISTOSOMA JAPONICUM IN ERYUAN COUNTY, YUNNAN PROVINCE, CHINA

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Bayesian spatial risk profiling holds promise to enhance our understanding of the epidemiology of parasitic diseases, and to target interventions in a cost-effective manner. Here, we present findings from a study using Bayesian variogram models to map and predict the seroprevalence of Schistosoma japonicum in Eryuan county, Yunnan province, China, including risk factor analysis. Questionnaire and serological data were obtained through a cross-sectional survey carried out in 35 randomly selected villages with 3,220 people enrolled. Remotely-sensed environmental data were derived from publicly available databases. Bivariate and non-spatial Bayesian multiple logistic regression models were used to identify associations between the local seroprevalence and demographic (i.e. age and sex), environmental (i.e. location of village, altitude, slope, land surface temperature and normalized difference vegetation index) and socio-economic factors. In the spatially-explicit Bayesian model, S. japonicum seroprevalence was significantly associated with sex, age and the location of the village. Males, those aged below 10 years and inhabitants of villages situated on steep slopes (inclination =20°) or on less precipitous slopes of >5° above 2,150 m were at lower risk of seroconversion than their respective counterparts. Our final prediction model revealed an elevated risk for seroconversion in the plains of the eastern parts of Eryuan county. In conclusion, the prediction map can be utilized for spatial targeting of schistosomiasis control interventions in Eryuan county. Moreover, S. japonicum seroprevalence studies might offer a convenient means to assess the infection pressure experienced by local communities, and to improve risk profiling in areas where the prevalence and infection intensities have come down following repeated rounds of praziguantel administration.

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SPATIO-TEMPORAL CORRELATION BETWEEN HUMAN AND BOVINE SCHISTOSOMIASIS IN CHINA: INSIGHT FROM THREE NATIONAL SAMPLING SURVEYS

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Insight into the spatial and temporal contamination of the environment by bovine faeces in China can provide important information on the significance of bovines in the transmission of human schistosomiasis. This insight will be useful for the new evidence-based strategy of the Chinese national schistosomiasis control programme. To enhance our understanding of the spatio-temporal relationship between the prevalence of human and bovine schistosomiasis, we performed correlation and regression analyses using data from three national sampling surveys on schistosomiasis, carried out in 1989, 1995 and 2004. In addition, we established a geographical information system and performed spatial analyses to identify the high-risk areas of the disease. We found that schistosomiasis is mainly concentrated in the marshlands along the Yangtze River. It was also noted that, although the human prevalence and force of transmission in highly endemic areas has been reduced since 1989, the relative importance of bovine schistosomiasis has increased. This is seen in a declining Spearman correlation coefficient between the infection prevalence in humans and in bovines over time (0.812 in 1989, 0.754 in 1995 and 0.376 in 2004). In parallel, the slope of the linear regression decreased from 0.395 in 1989 to 0.215 in 2004. Our data therefore suggest that future schistosomiasis control efforts in China should more vigorously address the important role of bovines in the transmission of human schistosomiasis, and to reduce the environmental contamination of Schistosoma japonicum eggs by bovines.

ASSESSMENT OF THE AGE-SPECIFIC DISABILITY WEIGHT OF CHRONIC SCHISTOSOMIASIS JAPONICA

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[Objection]: To estimate the age-specific disability weight of chronic schistosomiasis japonica in China. **[Methods]**: Between October 2004 and January 2005, residents from two schistosome-endemic counties were screened for *Schistosoma japonicum* infection using an

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enzyme-linked immunosorbent assay. Disability and morbidity were assessed in seropositive individuals using the European quality of life questionnaire with an additional cognitive dimension (known as the "EQ-5D plus") and ultrasonography. The age-specific disability weight of chronic schistosomiasis was estimated based on participants self-rated health scores on the visual analogue scale of the questionnaire; the relationships between health status, morbidity and disability weight were explored using multilevel regression models. [Results]: Of 2843 seropositive individuals, 1419 (49.9%) were classified as having chronic schistosomiasis. Hepatomegaly was found in 76.3% (1082/1419); hepatic fibrosis was found in 73.3% (1040/1419); and splenomegaly was found in 18.6% (264/1419). Diarrhoea was the most common self-reported symptom (46.0%; 653/1419), followed by abdominal pain (32.6%; 463/1419), impaired capacity to work or study (30.7%; 436/1419), and blood in the stool (11.1%; 157/1419). More than half of the respondents reported impairments in at least one dimension of the EQ-5D plus questionnaire, particularly pain or discomfort (47.9%; 675/1410) and anxiety or depression (39.4%; 555/1410). The overall disability weight was 0.191, and age-specific weights ranged from 0.095 among those aged 5-14 years to 0.246 among those aged > 60 years. Multilevel regression models indicated that the disability weight was significantly associated with the participants sex, grade of hepatic fibrosis, the presence of hepatomegaly, abdominal pain, blood in the stool, impaired capacity to work or study, and cognition. [Conclusion]: The disability weight attributable to chronic schistosomiasis japonica is high and increases with age. Our findings call for a reappraisal of the disability weights due to chronic schistosomiasis mansoni and schistosomiasis haematobia as well as a re-estimation of the global burden of schistosomiasis.

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EPIDEMIOLOGY OF SCHISTOSOMIASIS IN THE PEOPLE'S REPUBLIC OF CHINA, 2004

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WANG Li-ying¹⁰ ZHANG Shi-qing LIN Dan-dan⁵ CHEN Ming-gang HAO Yang¹⁰

Results from the third nationwide cluster sampling survey on the epidemiology of schistosomiasis in the People's Republic of China, conducted by the Ministry of Health in 2004, are presented. A stratified cluster random sampling technique was used, and 239 villages were selected in 7 provinces where *Schistosoma japonicum* remains endemic. A total of 250,987

residents 6-65 years of age were included in the survey. Estimated prevalence rates in the provinces of Hunan, Hubei, Jiangxi, Anhui, Yunnan, Sichuan, and Jiangsu were 4.2%, 3.8%, 3.1%, 2.2%, 1.7%, 0.9%, and 0.3%, respectively. The highest prevalence rates were in the lake and marshland region (3.8%) and the lowest rates were in the plain region with waterway networks (0.06%). Extrapolation to all residents in schistosome-endemic areas indicated 726,112 infections. This indicates a reduction of 16.1% compared with a nationwide survey conducted in 1995. However, human infection rates increased by 3.9% in settings where transmission is ongoing.

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- 5 Jiangxi Institute of Parasitic Diseases
- 6 Anhui Institute of Parasitic Diseases
- 7 Jiangsu Institute of Parasitic Diseases
- 8 Sichuan Institute of Parasitic Diseases
- 9 Yunnan Institute of Endemic Diseases

INSIGHT INTO THE HOST-PARASITE INTERPLAY BY PROTEOMIC STUDY OF HOST PROTEINS COPURIFIED WITH THE HUMAN PARASITE, SCHISTOSOMA JAPONICUM

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The tegument proteins of schistosome have attracted the most attention in studies of host-parasite interplay, while the host proteins acting at the host-parasite interface remained largely elusive. Here, we undertook a high-throughput proteomic approach to characterize the schistosome-adsorbed host proteins. Fifty five distinct host proteins were confidently identified in *S. japonicum* samples, including cercaria, schistosomula, adults, eggs, and miracidia, together with tegument and eggshell preparations, of which 23 and 38 host proteins were identified in adult worms and eggs, respectively. Among the schistosome-adsorbed host proteins, host neutrophil elastases were found in the granuloma initiated by schistosome egg deposition, implying that the host innate immune molecules could participate in the granuloma formation for fighting against schistosome invasion, except for the adaptive immune system. In addition, some host proteins, such as proteinase inhibitor and superoxide dismutase, might be utilized by schistosome to counteract or attenuate the host attacks. These parasite-adsorbed host proteins will provide new insights into the host immune responses against schistosome infection, the evasive behavior of the adult worms, and the granuloma formation, which could render an in-depth understanding for the host-parasite interplay.

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STUDY PROGRESS ON THE MODE OF ACTION OF PRAZIQUANTEL AGAINST SCHISTOSOMES

XIAO Shu-hua

Praziquantel is the only effective drug of choice against five huaman species of schistosomes. Main advantages of praziquantel include convenient oral administration, high safety and efficacy as well as short treatment course. To better understand the mode of action of praziquantel against schistosomes would be helpful for further development of new broad-spectrum anthelminthics. This paper summarizes the 30 years' research progress on the mode of action of the drug against schistosomes proceeded by domestic and abroad laboratories.

IN VITRO AND IN VIVO ACTIVITIES OF SYNTHETIC TRIOXOLANES AGAINST MAJOR HUMAN SCHISTOSOME SPECIES

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Schistosomiasis is a parasitic disease that remains of considerable public health significance in tropical and subtropical environments. Since the mainstay of schistosomiasis control is chemotherapy with a single drug, praziquantel, drug resistance is a concern. Here, we present new data on the antischistosomal properties of representative synthetic 1, 2, 4-trioxolanes (OZs). Exposure of adult Schistosoma mansoni for 24 h to a medium containing 20 mug/ml OZ209 reduced worm motor activity, induced tegumental alterations, and killed worms within 72 h. While exposure of S. mansoni to OZ78 had no apparent effect, addition of hemin reduced worm motor activity and caused tegumental damage. Administration of single 200-mg/kg of body weight oral doses of OZ78, OZ209, and OZ288 to mice harboring a juvenile S. mansoni infection resulted in worm burden reductions of 82.0 to 95.4%. In the adult infection model in mice, single 400-mg/kg doses of these compounds resulted in a maximum total worm burden reduction of 52.2%. High worm burden reductions (71.7 to 86.5%) were observed after administration of single 200-mg/kg doses of OZ78 and OZ288 to hamsters infected with either juvenile or adult S. mansoni. A single 200-mg/kg dose of OZ78 to hamsters infected with adult Schistosoma japonicum resulted in total and female worm burden reductions of 94.2 to 100%. Our results, along with the low toxicity, metabolic stability, and good pharmacokinetic properties of the OZs, indicate the potential for the development of novel broad-spectrum antischistosomal OZ drug candidates.

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MALARIA

DEVELOPMENT OF A PCR-BASED METHOD FOR DETECTION OF PLASMODIUM FALCIPARUM INFECTED MOSQUITOES

ZHENG Bin LIU Yan WU Song WANG Xue-zhong¹

[Objective] To develop a PCR-based method for detection of *Plasmodium falciparum* infected mosquitoes. **[Methods]** One pair of primers specific to small subunit ribosomal DNA of *P. faciparum* were used to amplify the specific SSUrDNA 188 bp fragment of *P. faciparum* for detecting *P. faciparum* infected mosquitoes with PCR-based method. **[Results]** As few as 10 sporozoites in one mosquito no matter collected in the field or infected in the lab could be detected with the PCR-based method. In contrast, no such specific 188 bp DNA band was detected in *P. vivax* and uninfected mosquito. **[Conclusion]** The PCR-based method can be used to detect *P. faciparum* infected mosquitoes collected in the field.

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APPLICATION OF ARIMA MODEL ON PREDICTION OF MALARIA INCIDENCE*

ZHOU Shui-sen HUANG Fang SHEN Yu-zu¹

[Objective] To explore the applications of time series ARIMA model and fit the predictive model of malaria incidence. **[Methods]** ARIMA model was established based on the month malaria incidences from 1996 to 2005 in Huaiyuan County of Anhui Province. Parameters of the model were estimated through maximum likelihood method; the structure was determined according to criteria of residual un-correlation and concision, and the order of model was confirmed through Akaike Information Criterion (AIC) and Schwarz Bayesian Criterion (BSC). The constructed model was used to predict the month incidence in 2006 and the result was compared with the actual incidence. **[Results]** ARIMA(0,1,1)×(0,1,1)12 model can appropriately fit the malaria incidence with the least estimated variance of 0.60, AIC=187.00, SBC=193.58, and the mathematic formulation was(1-B)(1-B12)Zt=(1-0.591B)(1-0.281B12)at. The predicted month incidences were consistent with the actual values with the average estimated error of 0.03. **[Conclusion]** The ARIMA model can be used to fit the trend of malaria incidence in time series and to forecast for the malaria incidence with high prediction precision of short-term time series.

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FACTORS AFFECTING MALARIA OUTBREAK IN CONGJIANG COUNTY OF GUIZHOU PROVINCE

SHENG Hui-feng ZHENG Xiang SHI Wen-qi XU Jian-jun¹ JIANG Wei-kang WANG Duo-quan TANG Lin-hua

[Objective] To make a field investigation on the affecting factors of malaria outbreak in a village of Congjiang County, Guizhou Province. [Methods] The investigation was made in August, 2006. Filter paper dry blood samples were taken for indirect fluorescent antibody test (IFAT) from all the 495 residents above 1 year-old in the village where an outbreak of malaria was reported. Questionnairing was conducted in 423 villagers over 10 years-old, covering malaria history in the past 2 years, knowledge on malaria and its control, use of mosquito nets, and out-door sleeping habit. Data on febrile outpatients were collected from the records of the township health center for analyzing the compliance of the patients in seeking medical services. Mosquito collecting by human-bait before mid-night and in mosquito nets and cattle pens in early morning was performed for mosquito composition and man-biting rate. [Results] Re-examination of the 42 positive blood smears confirmed 12 positives of P.vivax infection. The malaria incidence in 18 d was 2.1%, including 4 cases clinically diagnosed. The antibody positive rate of IFAT in the population was 8.7% (43/495) with a positive GMRT of 20.6, overall GMRT of 10.6; the IFAT positive rate in the age group of under 5 was 7.5% (3/40) with a GMRT of 25.1. The rate of seeking medical advice among febrile patients was 81.3% (118/145), 78.8% (93/118) of which being in the village clinic. The average time of going to a doctor after fever was 3.9 days, 37.4% (195/521) and 3.3% (17/521) were in 4-6 days and over 10 days respectively, with the longest 26 days. The average knowledge rate on malaria was 25.5% (108/423), with 17.1%, 29.2% and 40.0% in the groups of illiteracy, primary school and high school education respectively. A statistical significance was found between primary school/high school education and the illiteracy (P < 0.01). The average rate of using mosquito nets was 31.0%(131/423), out-door sleeping rate was40.7% (172/423). The radical cure rate in 2004 and 2005 was 68.2% (15/22) and 48.3% (14/29) respectively. In addition to Anopheles sinensis, An. anthropophagus and An. minimus also existed in rooms and nets with a man-biting rate of 0.0566 and 0.0755 respectively. [Conclusions] Three species of anopheline mosquitoes are the important transmitting vectors. Poor self-protection, outdoor sleeping habit, delayed examination and treatment, and irregular chemotherapy among the residents are the main factors resulting malaria outbreak.

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SURVEILLANCE AND FORECASTING OF MALARIAL EPIDEMICS

SHENG Hui-feng TANG Lin-hua

As an important insect-borne communicable disease which impacts people's health and socioeconomic development, the prevalence and epidemic of malaria are closely related to the natural and socioeconomic factors, and the immune status of human population. Through the effective surveillance on infection source, vectors and climate, and with the aid of mathematical models and RS/GIS technologies, the early forecasting and warning of malaria epidemic may be realized.

LOCAL KNOWLEDGE, ATTITUDE AND PRACTICES (KAPS) ON MALARIA: A BASELINE STUDY OF CAOCHONG VILLAGE IN HUBEI PROVINCE, CHINA

XIA Zhi-gui ZHANG Hua-xun¹ CHEN Kai-jun² SU Guo-an² CHEN Fa-feng³ HUANG Guang-quan¹ TANG Lin-hua

[Objective] To determine the social and behavioral factors that may contribute to high malaria incidence in the Anopheles sinensis areas of Hubei Province and provide the baseline data for designing an appropriate operational research strategy to improve the malaria situation in central part of China. [Methods] From June 23 to July 28 of 2004, the social and behavioral data associated with the acquisition, transmission, diagnosis and treatment, prevention and control of malaria were collected from Caochong, one of the hyperendemic villages in Hubei province, through one Focus Group Discussion(FGD)with malaria control service personnel from township hospital and county CDC, one FGD with the village leaders, and one household survey with the randomly sampled 201 questionnaire respondents. [Results] More than 70% of the respondents linked malaria with mosquito bites, while 30.8% of the respondents described the local misconceptions, and 13.9% of the respondents did not know any information on malaria infection and transmission. About 97% of the respondents knew repeated fever and chill were the common symptoms of malaria, 77.1% of the people would seek treatment at the village clinics once they had contracted malaria. The rates of households using bed nets and mosquitocide or mosquito incense was more than 95% and 81% respectively, while 98.0% of the respondents thought of taking the antimalarials as the first way to prevent from malaria infection. The private doctors had no microscopes or Rapid Diagnostic Tests (RDTs) and they always prefer to give antibiotics and febrifuge treatment to the patient without typical malaria symptoms. The private doctors would not like to report the cases they diagnosed because this is time-consuming and not economically rewarding. The salary for the malaria control professionals at grassroots level was low, and the phenomenon of the brain drain was common.

[Conclusion] Villagers' beliefs and practices reflect dualistic system where the scientific and cultural explanations exist side-by-side, and the role of village doctors in malaria control and prevention cannot be undermined. Health education is necessary for improving the knowledge and perceptions of the local people on malaria infection, transmission, prevention, and the necessity of seeking blood test and drug treatment at township hospital. Moreover, the private sectors(village doctors)can be provided with training and facilities to avoid misdiagnosis, drug misuse, and case under-reporting. It is also important to pay more attention to the brain drain of the malaria control professionals at ground level.

MULTIPLEX PCR FOR ANALYSIS OF THE PLASMODIUM FALCIPARUM DRUG RESISTANCE MOLECULAR MARKERS*

ZHANG Guo-qing TANG Lin-hua GUAN Ya-yi ZHOU Shui-sen ZHENG Bin HUANG Fang WU Song LIU Yan

[Objective] To develop a multiplex PCR protocol for amplification of five Plasmodium falciparum drug resistance related genes, thereby facilitate the rapid and high throughput analysis of the drug resistance molecular markers. [Methods] Five pairs of primers were designed according to the reference sequences by using Primer Premier 5.0 and Oligo 6.0 software. Drug resistance related genes, including P. falciparum chloroquine resistance transporter (Pfcrt), multi-drug resistance 1 (Pfmdr1), dihydropteroate synthetase (Pfdhps), dihydrofolate reductase (Pfdhfr) and sarco/endo-plasmic reticulum Ca2+-ATPase(PfATPase6), were amplified by single-tube multiplex PCR using Hot Start Taq DNA Poly-merase among negative controls (P. vivax, P. berghei, P. cynomolgi, Leishmania donovani, Cryptosporidium andersoni), blank control (using H2O as template), as well as P. falciparum laboratory isolates (3D7, Dd2, HB3, FCC1/HN and CMH/YN) and field samples (collected from Yunnan, Hainan of China and Myanmar). After amplification, the PCR products were analyzed by agarose gel electrophoresis. The sequencing results were aligned to the reference sequence using BLAST. [Results] Five expected bands at 315, 437, 514, 594 and 770 bp were obtained with no additional or nonspecific products in P. falciparum laboratory isolates and field samples. The sequencing results were identical with the reference sequence except the polymorphism sites, and exhibited more than 98.5% homology. The multiplex amplification was performed successfully starting from 0.1ng of DNA template. No band was observed in negative controls and blank control. [Conclusion] The present study establishes a method to amplify five Plasmodium falciparum drug resistance related genes harboring 21 SNPs by one-tube reaction. The multiplex PCR protocol showing high specificity and sensitivity is more convenient and efficient in analyzing the P. falciparum drug resistance molecular markers as compared with 88

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traditional nested PCR.

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ESTABLISHMENT AND EVALUATION OF COLLOID GOLD LABELED IMMUNOCHROMATOGRAPHIC STRIP TEST FOR RAPID DIAGNOSIS OF MALARIA*

WANG Jun-yun SHI Feng YANG Yue-tao GAO Chun-hua BAO Yi-fang TANG Lin-hua

[Objective] To establish and evaluate a gold immunochromatographic strip test for detection and differentiation of Plasmodium vivax and P.falciporum.[Methods] The monoclonal antibodies,F4H12,G4C9 and D8F7,were conjugated with colloid gold as detecting reagent; monoclonal antibody B2G10(against P.vivax/P.faciporum)and D6A7(only against P.falciporum)were immobilized on nitrocellulose in proper position. Blood samples from 107 febrile patients from endemic area of malaria and 17 patients with visceral leishmaniasis were used for evaluating the specificity. Blood samples of malaria patients (110 with P.vivax and 54 with P.falciparum) were used for evaluating the sensitivity. [Results] 5 samples out of 107 febrile patients and 17 patients with visceral leishmaniasis showed false positive reaction with a specificity of 96.0%(119/124), all the 17 samples from patients with visceral leishmaniasis were negative.164 blood samples of malaria patients showed а sensitivity of 92.3%(153/164),92.7%(102/110) and 94.4%(51/54) for patients infected with P.vivax or P.falciporum, respectively.[Conclusion] The immunochromatographic strip test based on antigen-capturing is a sensitive, specific, simple and rapid assay for malaria diagnosis.

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STUDY ON THE SPATIAL DISTRIBUTION OF MALARIA IN YELLOW RIVER AND HUAI RIVER AREAS BASED ON THE "KRIGING" METHOD*

ZHOU Shui-sen HUANG Fang TANG Lin-hua ZHENG Xiang SHEN Yu-zu¹ SU Yun-pu² HUANG Guang-quan³

[Objective] To explore the spatial distribution of malaria in areas along the Yellow River and Huai River. **[Methods]** Data for malaria incidence of 156 counties or cities along the Yellow River and Huai River in 2005 were collected to establish the geographical information system data base by Arcgis 9.0 software. Mapping the malaria probability distribution based on the GIS data base by the spatial local interpolation method in the extension function. The predictive incidence probability map and semi-variance function was produced by unbiased criterion. Cross-validation technique was used to evaluate the fitness of the distribution maps by mapping the error distribution map. **[Results]** The distribution of malaria in counties along the Yellow River and Huai River in the year 2005 was auto-correlated in spatial and the range was 98 928 m. The semi-variogram model was spherical. The cross-validation showed that the map could estimate the spatial distribution of malaria correctly and the standardized mean was 0.008 621. **[Conclusion]** Kriging method could predict the spatial distribution of malaria in counties along the Yellow River and Huai River. The variation of malaria incidence in spatial were related with distance apart, which demonstrated two aggregative centers including the boundary of north Anhui Province and Henan Province and the boundary of Henan and Hubei Provinces. The spatial distribution of malaria was not coincident with the administrative map.

THE APPLICATION OF GENE CHIP TECHNOLOGY IN MALARIA RESEARCH

ZHANG Guo-qing TANG Lin-hua

Gene chip technology, developed in the late 1980s, has been demonstrating great power on various areas of life science. This technology has been gradually applied in the research of *Plasmodium, Anopheles* and malaria animal models since the accomplishment of whole genome sequencing of *Plasmodium falciparum* and *Anopheles gambiae*. This review summarises the basic principle of DNA micorarray and its application in malaria research.

LEISHMANIASIS

RESEARCH PROGRESS ON CANINOTIC AND EUZOONOTIC TYPE VISCERAL LEISHMANIASIS IN CHINA

JIN Chang-fa HONG Yu-mei XIONG Guang-hua

The developmental stages of leishmaniasis in China showed different endemic characters. From the wild animals to dogs and then to human, there are three stages for leishmaniasis transmission including euzoonotic type visceral leishmaniasis, caninotic type visceral leishmaniasis and anthroponotic type visceral leishmaniasis. The mountain area of Southern Gansu and Northern Sichuan is the endemic area of caninotic type visceral leishmaniasis and anthroponotic type visceral leishmaniasis. Human may be casually infected by the wild sandflies from the wild animals, but most of the patients are infected by wild sandflies with parasites from infected dogs, while the dogs were infected from wild animals by sandflies. The clarification of

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this transmission relationship will lay a theoretic base for discussing insight into the genesis and evolvement of visceral leishmaniasis, as well as making plans and actualizing them based on the feature and rules of the disease thus to promote the control and prevention of visceral leishmaniasis and its vector—sandflies.

ASYMPTOMATIC LEISHMANIA INFECTION IN HUMAN POPULATION OF WENXIAN COUNTY, GANSU PROVINCE

WANG Jun-yun FENG Yu¹ GAO Chun-hua JIN Chang-fa CHEN Sheng-bang¹ ZHANG Chou-ji¹ HE Jin-ping¹ YANG Chen-ming¹ YANG Yue-tao BAO Yi-fang

[Objective] To analyze the status of Leishmania infantum asymptomatic infection in human population of a Kala-azar endemic area in Wenxian County, Gansu Province, and to evaluate the tests used.**[Methods]** Blood samples were tested by PCR using two pairs of primers,RV1-RV2 and K13A-K13B,for detecting Leishmania-specific DNA.ELISA and rK39-dipstick were used to detect Leishmania-specific antibodies.**[Results]** The positive rate of PCR,ELISA and rK39-dipstick was 30.9%(83/269),24.2%(65/269) and 0(0/269) respectively.**[Conclusion]** The prevalence of asymptomatic infection of L.infantum in humans is high in the area. PCR test based on RV1-RV2 and K13A-K13B primer pairs is a sensitive and specific method for detecting the asymptomatic infection.

RESEARCH PROGRESS ON TRANSMISSION MECHANISM OF HUMAN LEISHMANIA AND THEIR VECTOR SANDFLY SPECIES

GAO Chun-hua GUAN Li-ren WANG Jun-yun

This review summarized the transmission mechanism of human Leishmania and the research progress on their vector sandfly species. According to the analyses of the inter-relationship between Leishmania parasites and their vector sandfly species, it is suggested that the identification of Leishmania species should be based on the analysis of Leishmania DNA combined with the recognition of clinical and epidemiological characteristics.

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¹ Gansu Provincial Center for Disease Control and Prevention

SNAILS

A COMPARATIVE STUDY OF THREE METHODS IN DETECTING ANGIOSTRONGYLUS CANTONENSIS LARVAE IN LUNG TISSUE OF POMACEA CANALICULATA*

LIU He-xiang ZHANG Yi LV Shan ZHU Dan WANG Xian-hong HU Ling ZHOU Xiao-nong

[Objective] To compare the efficiency of three methods, lung-microscopy, tissue homogenate and enzyme digestion in the detection of *Angiostrongylus cantonensis* larvae from the lungs of snails. **[Methods]** 60 *Pomacea canaliculata* infected by the first-stage larvae of *A. cantonensis* were devided into 2 groups and the lung of each snail from the two groups was separated from the soft body. All the lungs were examined under microscope and larval nodes were counted. Each lung from one group was ground and that from the other was artificially digested by enzyme, the number of larvae in each lung was recorded. The efficiency of three methods was compared. Enzyme digestion was also used to estimate number of larvae in lung and in other body parts. **[Results]** By using enzyme digestion as the standard method, the detection rate of lung-microscopy, tissue homogenate and enzyme digestion was 96.7%,93.4% and 100% respectively (χ 2=2.069, P>0.05), while the lung-microscopy was significantly faster (Z=4.782, P<0.01). The number of larvae in snail lung was positively correlated with that in other part (r=0.847, P<0.01). **[Conclusions]** The lung-microscopy in larvae detection is similarly efficient to the other two methods but faster, which is therefore more suitable for snail screening in the field.

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MOLLUSCICIDAL EFFECT OF RONGBAO POWDER IN SCHISTOSOMIASIS MOUNTAINOUS AREAS

ZHU Hong-qing ZHONG Bo¹ CAO Chun-li BAO Zi-ping WAN Xue-xiang² WANG Zhi-xiang² CHEN Lin¹ GUO Jia-gang

[Objective] To evaluate the molluscicidal effect of Rongbao Powder in schistosomiasis mountainous areas. **[Methods]** A total of 64134 m2 in Yuanping Village, Duoyue Township and 50934 m2 in Wuxing Village, Funiu Township with exempting ploughing farmland of Meishan City, Sichuan Province were sampled as the study group. Rongbao Powder mixtured with fine soil was sprinkled in the field of the study group. With the sameness of landform and vegetation, 36600 m2 of Yuanping Village and 4333 m2 of Wuxing Village were sampled as the control

group. There was no snail control measure in the canals and ditches of study and control groups in Yuanping Village, and niclosamide mud was used in those places of study and control groups in Wuxing Village. The appearance rate of snail frames, the change of average density of living snails and the result of environment intervention were observed, and the fertilization and harvest of the field were investigated. [Results] As the short-or long-term results, the molluscicidal effectiveness of Rongbao Powder, the study group in Wuxing Village, Funiu Township was better than that in Yuanping Village, Duoyue Township. After one planting duration, the appearance rate of snail frames of Yuanping Village's study group declined by 68.64% (χ 2=136.58,P<0.01), the average density of living snails of Yuanping Village decreased by 35.78%(Z=-2.22,P<0.05), the appearance rate of snail frames of Wuxing Village reduced by $97.03\%(\chi 2=349.68, P<0.01)$, the average density of living snails of Wuxing Village reduced by 96.64%(Z=-7.65,P<0.01).On the cost-benefit, compared with the general field work, the benefit of the study group increased 0.06 Yuan/m2 after Rongbao Powder applying. [Conclusions] Rongbao Powder is suitable for snail control in the areas with exempting ploughing farmland and the cost-benefit is better. When applying Rongbao Powder on snail-killing in field, those canals and ditches should be implemented with the snail control measure.

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EFFECT OF TEMPERATURE ON THE INFECTION WITH POMACEA CANALICULATA BY ANGIOSTRONGYLUS CANTONENSIS*

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To explore the optimum temperature range and the lower critical temperature for *Pomacea* canaliculata infected by Angiostrongylus cantonensis, by observing the infections under various temperature conditions, offsprings of adult *P.canaliculata* and first-stage larvae of *A.cantonensis* were put separately into constant temperature boxes for 4 hours at 5,10,15,20,25 and 30°C, respectively. And then the snails and worms in the same box were mixed to infect for 24 hours. The infected snails were observed for the status of operculum. All the snails were washed and put into aquarium $(24\pm1^{\circ}C)$ by temperature group. The infection rates and intensities were recorded and the correlation between them and temperature was established. It was found that the infection rates were 0%, 20%, 55%, 95%, 100%, 100% at 5,10,15,20,25 and $30^{\circ}C$, respectively. The relationship between infection rate and temperature was depicted by the function Y= 1E-05x4-0.0011x3 + 0.0292x2-0.2362x + 0.5833.The lower critical temperature for infection was $6.66^{\circ}C$ according to the function. And the infection intensities were associated with temperature (rs=0.3448, P<0.0032),there were higher intensities at 25 and 30^{\circ}C, and the proportion of snails with infection intensity of more than 500 worms was bigger at $25^{\circ}C$ than

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other groups. It is concluded that the optimum temperature range is $20-30^{\circ}$ C and the lower critical temperature is 6.66° C. Spring, summer and autumn are the risk seasons for *P. canaliculata* infected by *A. cantonensis*, summer and autumn are the risk reasons for angiostrongliasis epidemic according to these parameters.

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MECHANISM OF ACTION OF A PLANT MOLLUSCIDE HL ON ONCOMELANIA HUPENSIS*

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To observe the effect of a plant molluscide HL on Oncomelania hupensis in order to explore its mechanism of action, the snails were immersed into HL and water in different concentrations (25 mg/L, 50 mg/L and 100 mh/L), and then the soft tissues of snails were separated and the sections of snail tissues were made with Cryostat Microtome. The enzymatic activities of LDH, SDH, AChE, CCo and NOS of O.hupensis were examined by enzyme-histochemical technology and the staining reaction of the snail tissues as well as the average gray density were observed with image analysis system of biomicroscopy. It was found that the enzymatic activities of LDH, SDH, AChE, CCo and NOS in the muscle fibers, ganglia, mouth, liver, pharyngeal cavity and tegum entary membrane were decreased after immersion with different concentrations of HL. The more concentrated HL to be used, the more prominent in the decreased enzymatic activity appeared, and there showed significant differences with that of the control group. It is possible that the mechanism of action for HL may be due to the breakage of nerve transmission and signal transduction within snail bodies, thus causing inhibition energy supplies and ultimate death. Therefore, this mechanism of action is quite similar to that of niclosam.

ENZYME HISTOCHEMISTRY: THE EFFECT OF META-LI ON ONCOMELANIA HUPENSIS

ZHU Dan LI Hong-jun¹ LIU He-xiang ZHANG Yi GUO jian LIANG You-sheng¹ ZHOU Xiao-nong

[Objective] To explore the killing mechanism of META-Li against Oncomelania hupensis by observing the change of enzyme activity in snail tissue. **[Methods]** Sixty snails were divided into 2 groups. Snails in experiment group were immersed in META-Li (100 mg/L) for 2 d and

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soft tissue was separated for frozen sections. Histochemical staining for the enzymes CCO,LDH, SDH, AChE and NOS was done by routine method and the average grey density was measured under microscopy. Tissue sections of 10 snails were used to detect grey density for each enzyme. Snails without META-Li treatment served as control. [**Results**] The enzyme activity of CCO and AChE in the experiment group was significantly lower than that in the control (t=12.26, P<0.01), that of LDH and NOS in the experiment group was significantly higher than that in the control (t=3.41, P<0.05). There was no significant difference on the enzyme activity of SDH between the two groups (t=0.51, P>0.05). [Conclusion] The snail-killing effect of META-Li may be relevant to the enzyme activity in energy metabolism and the blocking of the nerve transmission.

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THE OTHERS

POPULATION GENETICS STUDY ON ANOPHELES MINIMUS IN YUNNAN PROVINCE BY SSR-PCR

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[Objective] To study the genetic variations of Anopheles minimus in Yunnan Province. **[Method]** An.minimus samples were collected from the villages of Yunnan Province. Multiplex-PCR and morphological examination were used for species identification. PCR products were obtained by SSR-PCR.BIOSIS,RAPDFST,RAPDDIST,PHILIP were used for calculation and analysis of the population diversity, FST, θ , Nm and genetic distance of each population, then dendrogram was constructed. **[Result]** A high level of genetic diversity in An.minimus was observed. The genetic variation in An.minimus C in Yuanjiang was lowest(43.3%),and was highest in An.minimus A(78.6%)in Luxi. According to the values of FST and θ , the genetic variation was mainly inside the population itself. In the analysis of gene flow among An.minimus A and C, the value of Nm was smaller than 1.Phylogenetic analysis revealed that the eight populations of An.minimus can be classified into two divisions, namely the An.minimus C in Daguan, Yuanyang and Mengla, and An.minimus C in Yuanjiang, An.minimus A in Luxi, An.minimus C in Lincang, An.minimus A in Xinping, and An.minimus A in Mengla. **[Conclusion]** The genetic distance and classification of An.minimus was established. The genetic variation is not correlated with the geographical distribution of the species.

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RESEARCH PROGRESS ON IMMUNODIAGNOSIS OF PARAGONIMIASIS IN CHINA*

CHEN Shao-hong ZHOU Xiao-nong

Chinese scientists have been engaging in the researches on paragonimiasis for 76 years, and significant progress has been achieved on morphology, epidemiology, immunodiagnosis, genetics and molecular biology of the parasite. But as there are many kinds of Paragonimus, which distribute widely with complicated clinic symptoms, the ratio of error or miss-diagnosis has been high at different places. Thus, to diagnose paragonimiasis and check the curative effect are becoming the difficult problem in clinic, epidemiology and parasitology. This article mainly summarizes the research progress on the immunodiagnosis methods of paragonimiasis.

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INVESTIGATION ON CURRENT STATUS OF IMPORTANT PARASITIC DISEASES IN ERYUAN COUNTY OF YUNNAN PROVINCE*

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[Objective] To understand the present status of human parasitic infections and their characteristics in Eryuan County of Yunnan Province in order to provide scientific basis for making the measures of parasitic diseases control. [Methods] A total sampled population of 3308 from 35 selected spots in Eryuan County by random sampling were investigated. Parasitological examinations were conducted for the infections of soil-transmitted nematodes, cestodes and Schistosoma japonicum with Kato-Katz technique and miraciduim hatching method. Serological tests were applied for trichinosis, cysticercosis and schistosomiasis. [Results] The total infection rate of parasites was 23.34%. The infection rates of human parasites in plateau areas and in mountain areas were 19.55% and 27.35%, respectively. There was a significant difference (P<0.01). Seven kinds of parasites were found, in which the infection rate of Ascaris was 15.75%, hookworm 0.33%, Trichuris 1.87%, Cestode (including Taenia solium and Hymenolepis diminuta) 3.72%, Enterobius 0.18%, Schistosoma japonicum 1.51%. The rate of persons infected with 2 kinds of worms was 8.94% in total infected people. The positive rates of serological tests for trichinosis, cysticercosis, and schistosomiasis were 57.30 % (2103/3670), 18.20% (668/3670) and 26.16% (958/3662), respectively. The total parasite infection rate of this investigation was 23.34%, less than 28.86%, that of the investigation of the whole province in 2004, but higher than 19.56%, that of the national investigation. [Conclusions] The population infection rate in mountain areas is significantly higher than that in plateau areas. The main 96

parasite is Ascaris, the second Cestode. The prevention and control of cestodiasis, trichinosis, cysticercosis and schistosomiasis will be the main target.

CITATION ANALYSIS OF PAPERS FROM "CHINESE JOURNAL OF PARASITOLOGY AND PARASITIC DISEASES" IN 5 YEARS

SHENG Hui-feng FU Xiu-lan BO Wei HU Ya-qing DAI Jing

[Objective] To analyze the citation of the papers published on the Chinese Journal of Parasitology and Parasitic Diseases during 2000-2004, and so as to find out its citation rule and the ability to absorb and utilize information . **[Methods]** Document metrological methods were used to analyze the volume, types and half-life of the citations of 833 papers from 30 issues of the Journal in the 5 years. And the Price index was also used. Bradford's Law was adopted to search the core periodicals for the citation. **[Results]** The overall citations were 6 385 and the citation rate increased from 84.4% in 2000 to 90.5% in 2004. The average citation of each paper was 7.7 pieces in the 5 years. 88.3% of the citations were from periodicals, with 34.8% and 65.2% from Chinese and foreign language periodicals respectively. The average half-life of domestic and foreign journals was 4.8 and 6.4 years respectively, and the average Price index was 51.8% and 40.3% respectively. 48.1% of the Chinese citations were from 4 core domestic journals, and 36.9% of the foreign language citations were from 12 major journals. **[Conclusion]** The citation of this Journal covers a relatively wide range source and shows an adequate ability to introduce recent progress on research information domestic and abroad in the field of parasitology. However, the time lag in citing foreign literature needs to be improved.

PRELIMINARY OBSERVATION OF THE EFFECT OF AMINOPHENYLAMIDINES COMPOUNDS, A NEW HELMINTHIC, ON *TRICHINELLA SPIRALIS* IN MICE

ZHANG Yong-nian CHEN Shao-hong CHEN Yao-qing CHANG Zheng-shan

[Objective] To observe the effect of Aminophenylamidines Compounds (9856) on *Trichinella spiralis* in mice. **[Methods]** Three different dosages of the drug, 10 mg/kg, 20 mg/kg and 30 mg/kg were given to the infected mice. And four development stages of the worm in mice were observed after the drug treatment. **[Results]** The reduction rates of larva on the stage of excystation in intestine were 100% for the three experimental groups, and the reduction rates of worms on adult stages were 76%, 91.9% and 97.4%, respectively. For the larva of migration stage in muscles, the reduction rates were 65.5%, 74.8% and 92.3%, and for encystation stage

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were 53.2%, 61.5% and 87.8%. **[Conclusion]** It indicated that Aminophenylamidines Compounds (9856) has a remarkable effect on *Trichinella spiralis* in all its four development stages.

CLINICAL OBSERVATION ON 899 CHILDREN INFECTED WITH INTESTINAL NEMATODES AND TREATED WITH TRIBENDIMIDINE ENTERIC COATED TABLETS

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[Objective] To evaluate the efficacy and safety of tribendimidine in treatment of children with hookworm and Ascaris lumbricoides infections. [Methods] An open and multi-center clinical trial was conducted in the provinces of Hainan, Sichuan and Guizhou. 899 children aged 4-14 years were enrolled in the study. Hookworm, A. lumbircoides or other helminth infections were diagnosed by improved Kato-Katz method. All the patients were treated orally with tribendimidine enteric coated tablet at a single dose of 200 mg. The efficacy was evaluated by stool examination 3-4 weeks post treatment. [Results] The cure rate and effective rate of the children with hookworm infection were 82.0%(433/528) and 99.2%(524/528), respectively, while in children with A.lumbricoides infection, they were 95.0%(576/639) and 99.8%(637/639), respectively. The efficacy of tribendimidine enteric coated tablet given to the children with Trichuris trichiura infection at a single dose of 200 mg was 36.8%(112/304). The adverse effect induced by tribendimidine, such as dizziness, nausea and vomiting, was light and transient with an adverse effect rate of 1.6% (14/899). No apparent impact was seen on the blood and urine routine examination, hepatic and renal function as well as ECG examination. [Conclusion] Tri-bendimidine given at a single dose of 200 mg exhibits lower adverse effect rate and potential efficacy in the treatment of children with hookworm and A.lumbricoides infections.

ESTABLISHMENT AND APPLICATION OF CIRCULATING ANTIGEN DETECTION IN PARAGONIMUS WESTERMANI INFECTION

CHEN Shao-hong LI Hao ZHOU Xiao-nong

Circulating antigen and antibody were detected by CAg-dot-ELISA & CAb-ELISA respectively on the clinically confirmed patients of paragonimiasis, people in paragonimus endemic area, cases with early infection of P. west-ermani, and casess with other parasitic infections. Circulating antigen was detected in 29 out of 70 cases with paragonimiasis with a 98

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sensitivity of 41.5%. The rate of cross reaction in cases with clonorchiasis sinensis and schistosomiasis was 25% (5/20) and 20% (4/20), respectively, and it was negative in 60 casess with other parasitic infections and healthy subjects, with an overall specificity of 93.6%. Specific antibody was detected in 67 of 70 cases with paragonimiasis with a sensitivity of 95.7%. The cross reaction rate in cases of clonorchiasis sinensis and schistosomiasis was 25%(5/20) and 20%(4/20), but negative in 60 casess with other parasitic infections and healthy subjects, with a specificity of 92.1%. 220 persons from paragonimus endemic area were all negative in antigen detection and 7(3.2%) showed antibody positive. Dot-ELISA for circulating antigen detection may be helpful in diagnosing early infection of P. westermani.

PRELIMINARY TEST OF *PHLEBOTOMUS* SURVEILLANCE BY LIGHT-TRAPS

GU Deng-an JIN Chang-fa LAN Qin-xian ZHANG Chou-ji¹ LI Fan¹ ZHANG Yi

Different light-traps were tested in Wenxian of Gansu Province, including the light-traps without lamp and with glucose solution as attractant. Results showed that the light-traps attracted more mosquitoes and other insects than sandflies, and it became difficult to pick up the sandflies from gathering packet; the light-trap without lamp captured smaller amount of sandflies but much less other insects; glucose showed no significant effect in attracting sandflies. The existing light-traps are not so effective for *Phlebotomus* surveillance, and it is suggested that more effective attractants be tried.

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STUDY ON SELECTION FOR LANDFILL LOCATION WITH GIS*

YANG Kun¹ HANG De-rong¹ YAN Wei-an¹ YANG Guo-jing¹ WU He-zhen¹ ZHOU Xiao-nong

In support of ArcGIS 8.3 software spaces analysis module(spatial analysis), the technique of the spatial superimposition and the spatial compound inquiry analysis were applied to select landfill field for future possible use at the south municipal district of Yangtze river in Jiangsu Province, and compare that with the monitoring sites of the landfill fields in use. The results indicated that geographic information system technology is possible for assistance analysis to select new landfill fields.

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ISOLATION AND IDENTIFICATION OF AN ISOLATE OF COW-ORIGIN CRYPTOSPORIDIUM SP*

LIU Hai-peng CAO Jian-ping SHEN Yu-juan CHEN You-gui¹ LI Xiao-hong LU Wei-yuan XU Yu-xin LIU Yi-sheng LIU Shu-xian ZHOU Xiao-nong TANG Lin-hua

[Objective] To isolate and identify Cryptosporidium oocysts from feces of naturally infected cow. **[Methods]** Fecal samples were collected from Cryptosporidium infected cows confirmed by modified acid-fast staining method. Oocysts were isolated and purified with Sheather sucrose density gradient centrifugation technique. Genomic DNA was isolated with Chelex-100. Both primers were designed to amplify Cryptosporidium small subunit ribosome RNA gene (SSU rRNA) and Cryptosporidium oocyst wall protein gene (COWP), respectively. The PCR products were cloned into pGEM-T and pGEM-T Easy vector and sequenced subsequently. Homology and phylogeny were analyzed with BLASTn and MEGA software. **[Results]** The results suggested that the size of oocysts was $(7.4\pm0.32) \,\mu m \, by(5.4\pm0.21) \,\mu m$ and the ratio of length and width was $1.37\pm0.07 \,(n=20)$. BLASTn revealed that the identity of SSU rRNA and COWP gene of Cryptosporidium isolated from cow to the counterparts of C.andersoni was 100% and 99% respectively. Phylogenetic reconstruction placed the isolated Cryptosporidium within the C.andersoni clade based on the sequence of SSU rRNA and COWP gene. **[Conclusion]** What isolated from naturally infected cow feces has been identified as C. andersoni.

PRELIMINARY OBSERVATION OF RELATIVITY OF EOSINOPHILS IN PERIPHERAL BLOOD PATIENTS WITH PARAGONIMIASIS*

CHEN Shao-hong LI Hao CHEN Jia-xu CHANG Zheng-shan ZHOU Xiao-nong

[Objective] To realize the relationship among sputum examination, serum antibody and Eosinophils in peripheral blood of patients with paragonimiasis.**[Method]** Eighty nine cases with paragonimiasis or Suspicious were selected is to do sputum examination,immunity serological test(DIGFA and ELISA),Eosinophils directly counting and sorting by percentage separately.**[Result]** Of 89 cases,47 people's sputum examination appeared positive,the ratio of positive reached 52.8%,immunological detection of dot-immune gold filtration(DIGFA) and ELISA positive reached 74%,Eosinophils of 93.2% people were increased in different degree.**[Conclusion]** The increasing degree Eosinophils of patient with Paragonimiasis is related to the intensity infection.

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^{*} Supported by National Natural Sciences and Technology Resources of China (2005DKA21104) $100\,$

CLONING, EXPRESSION AND ANALYSIS OF THE HEAT SHOCK PROTEIN OF CRYPTOSPORIDIUM ANDERSONI*

LIU Hai-peng CAO Jian-ping LI Xiao-hong LU Wei-Yuan SHEN Yu-juan XU Yu-xin ZANG Wei LIU Shu-xian

[Objective] To clone and express the partial encoding sequence of Mr 70 000 heat shock protein of Cryptosporidium andersoni (CaHSP70) in Escherichia coli and identify the recombinant protein. [Methods] Total RNA was extracted from oocysts of C.andersoni isolated from Xuzhou, Jiangsu (XZ-BOV). The CaHSP70 gene was amplified by RT-PCR. The PCR product was cloned and then subcloned into pET28a vector, and the recombinant plasmids were transformed into E.coli BL21(DE3) subsequently. The expressed protein induced by IPTG was purified and identified by SDS-PAGE and Western blotting, and was further analyzed by relevant bioinformatics softwares. The specific IgG antibodies in mice immunized by rCaHSP70 were detected by Western blotting and ELISA respectively. [Results] The deduced amino acid sequence showed to be identical with that of C. andersoni Mr 70 000 heat shock protein (HSP70). The recombinant protein expressed in the form of inclusion body was about Mr 43 000. It could be recognized by anti-His G labeled HRP antibodies and all the sera from mice infected with C. andersoni and children infected with C. parvum as well as sera from mice immunized with rCaHSP70 respectively. The rCaHSP70 possibly had multiple domains and potential antigenic determinants. Phylogenetic analysis showed that XZ-BOV and C. andersoni were in the same clade. ELISA showed that the level of specific antibodies against rCaHSP70 in immunized BALB/c and C57BL/6 mice was significantly higher than that of mice before immunization. [Conclusion] The recombinant plasmid pET28a-CaHSP70 has been constructed. The purified rCaHSP70 exhibits high antigenicity and seems a potential candidate antigen for immunodiagnosis of cryptosporidiosis.

* Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China (No. 2003BA712A03-06)

NEUTRAL RED CYTOTOXICITY ASSAY OF SMOKE CONDENSATE OF SOME DOMESTIC VIRGINIA TYPE CIGARETTES

WANG Qin-mei LAN Qin-xian WU Jia-tong ZHENG Sai-jing¹ JIN Yong-ming¹ XIANG Li-zhen QIAN Ying-jun

The cytotoxicity of cigarette smoke condensate(CSC) of 20 brands of domestic Virginia type cigarettes to Chinese hamster lung(CHL) mesothelial cells was tested with neutral red cytotoxicity assay, the results indicated that: 1) the IC50 of chloroquine(positive control) was $15.0\pm0.23\mu$ g/mL,while the IC50 of CSC of the 20 test brands ranged from 119.5 ± 13.6 to

 $218.4\pm15.9\mu$ g/mL;2) the cytotoxicity of CSC with packet labeled tar of 15mg/cig.to CHL cells was significantly higher than those labeled tar of 11mg/cig,and extremely significantly higher than those labeled tar of 10,9,8,and 5mg/cig;and 3) the CSC negatively correlated with its IC50 to CHL cells.

* Supported by Shanghai Tobacco (Group) Corp. (No. 04110)

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PRELIMINARY OBSERVATION OF RELATIVITY OF EOSINOPHILS IN PERIPHERAL BLOOD PATIENTS WITH PARAGONIMIASIS*

CHEN Shao-hong LI Hao CHEN Jia-xu CHANG Zheng-shan ZHOU Xiao-nong

[Objective] To realize the relationship among sputum examination, serum antibody and Eosinophils in peripheral blood of patients with paragonimiasis. **[Method]** Eighty nine cases with paragonimiasis or Suspicious were selected is to do sputum examination, immunity serological test (DIGFA and ELISA), Eosinophils directly counting and sorting by percentage separately. **[Results]** Of 89 cases, 47 people's sputum examination appeared positive, the ratio of positive reached 52.8%, immunological detection of dot-immune gold filtration(DIGFA) and ELISA positive reached 74%, Eosinophils of 93.2% people were increased in different degree. **[Conclusion]** The increasing degree Eosinophils of patient with Paragonimiasis is related to the intensity infection.

RESEARCH PROGRESS ON PATHOGENICITY AND GENETIC DIVERSITY OF *BLASTOCYSTIS HOMINIS*

LI Lan-hua ZHOU Xiao-nong

The pathogenic potential of *Blastocystis hominis* is still controversial because many epidemiologic and experimental animal studies gave quite different conclusions. Since extensive genetic heterogenicity has been demonstrated among *B. hominis*, the relation between different demes or genetically distinct genotypes of *B. hominis* and its pathogenicity has been studied. The article summarizes the research progress on pathogenicity and genetic diversity of *B. hominis* as well as their relations.

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DYNAMICS OF SPECIFIC ANTIBODY AND CIRCULATING ANTIGEN IN SERA FROM THE DOGS INFECTED WITH PARAGONIMUS WESTERMANI

CHEN Shao-hong ZHOU Xiao-nong ZHANG Yong-nian CHEN Jia-xu

[Objective] In order to observe dynamics of specific antibody and circulating antigen (CAg) in sera of the dogs infected with P.westermani experimentally. [Methods] Dogs were infected with the metacercaria of P.westermani isolated from freshwater crabs. Sera were collected from the infected dogs from 4 to 133 days for circulating antigen detection, and dynamics of the CAg in the sera of dogs were observed by dot-ELISA before and two months after praziguantel treatment. Dynamics of the specific antibody in sera of the dogs infected with P.westermani were observed with ELISA in different periods from 2 weeks to 19 weeks after the infection. [Results] Circulating antigen was firstly detected on the 6th day in the infected dog experimentally, and circulating antigen can be detected in all of the 6 dogs on the 10th day, with dilution level from 1:8 to 1:128, the highest dilution level being 1:256 on the 14th day and maintained to 34th day. The dilution title gradually decreased since 56th day to zero on the 84th day. The level of circulating antigen in serum increased temporarily 3 days after treatment with praziquantel for the dogs infected with P.westermani, and gradually decreased since 6th day after treatment until it disappeared. Specific antibody was detected in the infected dogs 4 weeks after the infection, and the highest titer of the antibody was seen from 4 to 12 weeks after infection, and thereafter maintained at a comparatively higher level. [Conclusion] The circulating antigen can be detected in sera of dogs 10-56 days after the infection, and so it has an earlier diagnostic value. The circulating antigen occurred temporarily after treatment with praziquantel in infected dogs, and disappeared gradually in one week.

WIDE GEOGRAPHIC DISTRIBUTION OF CRYPTOSPORIDIUM BOVIS AND THE DEER-LIKE GENOTYPE IN BOVINES

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Recent studies in the United States reported that approximately 85% of pre-weaned dairy calves were infected with zoonotic Cryptosporidium parvum, whereas only 1-2% of post-weaned calves and 1-2-year-old heifers were infected with this species. Cryptosporidium bovis and Cryptosporidium deer-like genotype were much more prevalent in the post-weaned animals. It is not clear whether the same infection pattern also occurs in other geographic areas. In this study, to determine whether the same Cryptosporidium infection pattern was present in other geographic areas, we genotyped Cryptosporidium specimens collected from two farms in China

and India, using specimens from farms in Georgia, USA for comparison. C. bovis was the most common species found in pre- and post-weaned calves in all three areas. In Georgia, the deer-like genotype was found frequently in pre- and post-weaned calves and Cryptosporidium andersoni was found in one post-weaned calf. Both C. bovis and the deer-like genotype were found in the few milking cows examined in Georgia. There were no differences in the small subunit rRNA gene sequences obtained from C. bovis or deer-like genotype among the three areas. One adult yak in China, however, was infected with a species similar to C. bovis, with only three nucleotide mutations in the target gene. All four common bovine Cryptosporidium spp. were differentiated from each other by restriction fragment length polymorphism analysis of PCR products with enzymes SspI and MboII. Thus, both C. bovis and the deer-like genotype are found in all age groups of cattle in diverse geographic areas and host adaptation of C. bovis might have occurred in yaks.

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CRYPTOSPORIDIUM GENOTYPES IN WILDLIFE FROM A NEW YORK WATERSHED

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To identify the animal sources for Cryptosporidium contamination, we genotyped Cryptosporidium spp. in wildlife from the watershed of the New York City drinking water supply, using a small-subunit rRNA gene-based PCR-restriction fragment length polymorphism analysis and DNA sequencing. A total of 541 specimens from 38 species of wildlife were analyzed. One hundred and eleven (20.5%) of the wildlife specimens were PCR positive. Altogether, 21 Cryptosporidium genotypes were found in wildlife samples, 11 of which were previously found in storm runoff in the watershed, and six of these 11 were from storm water genotypes of unknown animal origin. Four new genotypes were found, and the animal hosts for four storm water genotypes were found in a limited number of animal species and have no major public health significance.

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FACILE AND REPRODUCIBLE SYNTHESIS OF RED-EMITTING CDSE NANOCRYSTALS IN AMINE WITH LONG-TERM FIXATION OF PARTICLE SIZE AND SIZE DISTRIBUTION

ZHONG Xin-hua¹ FENG Yao-yu ZHANG Yu-liang¹

Numerous approaches have been reported for the synthesis of CdSe nanocrystals, but there is no effective facile method for the synthesis of high-quality large, red-emitting CdSe nanocrystals. Herein we report a convenient and reproducible approach for the preparation of high-quality (high luminescent quantum yield, nearly uniform size and shape distribution) large, red-emitting CdSe nanocrystals via injection of cadmium oleate solution into oleylamine media containing Se precursor at high temperature. The obtained red-emitting CdSe nanocrystals possess an unusually long-term (~15 h) fixation of particle size, size distribution, and high luminescent quantum yields in the high temperature annealing process. In addition, the final size of the CdSe nanocrystals obtained is heavily dependent on the amount of trioctylphosphine used, but it is insensitive to other parameters such as reaction temperature, precursor concentration, and reaction time. Through the variation of the amount of trioctylphosphine used, a large range of particle sizes and a wide variety of luminescent colors were obtained. The reported approach is suitable for large-scale production of high-quality CdSe nanocrystals, especially for large, red-emitting ones, due to its easy scale-up, high reproducibility, and low cost.

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OCCURRENCE OF *STRONGYLOIDES STERCORALIS* IN YUNNAN PROVINCE, CHINA, AND COMPARISON OF DIAGNOSTIC METHODS*

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Background: *Strongyloides stercoralis* is a neglected soil-transmitted helminth species, and there is a lack of parasitologic and epidemiologic data pertaining to this parasite in China and elsewhere. We studied the local occurrence of *S. stercoralis* in a village in Yunnan province, China, and comparatively assessed the performance of different diagnostic methods. Methodology/principal findings: Multiple stool samples from a random population sample were subjected to the Kato-Katz method, an ether-concentration technique, the Koga agar plate method, and the Baermann technique. Among 180 participants who submitted at least 2 stool samples, we found a *S. stercoralis* prevalence of 11.7%. Males had a significantly higher prevalence than females (18.3% versus 6.1%, p = 0.011), and infections were absent in individuals <15 years of age. Infections were only detected by the Baermann (highest sensitivity)

and the Koga agar plate method, but neither with the Kato-Katz nor an ether-concentration technique. The examination of 3 stool samples rather than a single one resulted in the detection of 62% and 100% more infections when employing the Koga agar plate and the Baermann technique, respectively. The use of a mathematical model revealed a 'true' *S. stercoralis* prevalence in the current setting of up to 16.3%. **CONCLUSIONS/SIGNIFICANCE**: We conclude that *S. stercoralis* is endemic in the southern part of Yunnan province and that differential diagnosis and integrated control of intestinal helminth infections needs more pointed emphasis in rural China.

HELMINTH INFECTIONS AND RISK FACTOR ANALYSIS AMONG RESIDENTS IN ERYUAN COUNTY, YUNNAN PROVINCE, CHINA

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Whilst infections with soil-transmitted helminths are common across China, the public-health significance of Schistosoma japonicum and food-borne helminths is more focalized. Only few studies have investigated the local epidemiology of helminth infections in rural China, including risk factor analysis. We collected stool and blood samples from 3220 individuals, aged 5-88 years, from 35 randomly selected villages in Eryuan county, Yunnan province, China. Stool samples were subjected to the Kato-Katz technique and examined for helminth eggs. Blood samples were tested for Trichinella spp., S. japonicum and cysticerci-specific antibodies. Data on individual and family-level risk factors were collected using questionnaires. The prevalence of Ascaris lumbricoides, Taenia spp., Trichuris trichiura and hookworms was 15.4%, 3.5%, 1.7% and 0.3%, respectively. The seroprevalence of Trichinella spp. was 58.8% and that of cysticercosis 18.5%. The egg positivity rate of S. japonicum in the 13 known endemic villages was 2.7%, and the corresponding seroprevalence was 49.5%. We observed a strong spatial heterogeneity in the families' economic status. S. japonicum infections were more prevalent among the Han than Bai nationality (odds ratio (OR)=3.77, 95% confidence interval (CI)=1.97-7.23) and tobacco growers (OR=3.66, 95% CI=1.77-7.60) and was only found at elevations below 2150 m above sea level. A. lumbricoides and Taenia spp. infections were more prevalent at altitudes above 2150 m when compared to lower settings (OR=1.51, 95%) CI=1.24-1.84 and OR=5.32, 95% CI=3.42-8.28, respectively). The opposite was found for T. trichiura (OR=0.31, 95% CI=0.14-0.70). Our findings can guide the design and spatial targeting of control interventions against helminth infections in Eryuan county.

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A FACILE ROUTE TO VIOLET- TO ORANGE-EMITTING CD_XZN_{1-X}SE ALLOY NANOCRYSTALS VIA CATION EXCHANGE REACTION

ZHONG Xin-hua¹ FENG Yao-yu ZHANG Yu-lian¹ GU Zhen-yu¹ ZOU Lei¹

The most advanced CdSe-based binary semiconductor system does not work well for emission in the short wavelength spectral region from 420 to 500 nm, which is of special interest for the preparation of nanocrystal-based blue LEDs and white light generation. $Cd_xZn_{1-x}Se$ alloy nanocrystals are proven to be an attractive alternative as their emission color can be tuned from the UV spectral region (ZnSe) to the red region (CdSe) by changing the composition of the Zn/Cd ratio in the alloy. Herein we report a facile and 'green' alloying approach for the preparation of highly luminescent $Cd_xZn_{1-x}Se$ nanocrystals via cation exchange reaction of the pre-prepared ZnSe nanocrystals with Cd^{2+} at intermediate temperatures. Through this new synthetic strategy, high-quality alloy QDs with different desired emission wavelengths or colors (ranging from 370 to 600 nm) can be made reproducibly and precisely by varying the predetermined amounts of the reaction precursors.

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MOLECULAR EPIDEMIOLOGY OF HUMAN BLASTOCYSTIS IN A VILLAGE IN YUNNAN PROVINCE, CHINA

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The purpose of this study was to improve our understanding of the molecular epidemiology of human Blastocystis, focusing on 239 randomly selected individuals in a single village in Yunnan province, China. Emphasis was placed on the relative frequency of different Blastocystis subtypes and underlying risk factors. We used a cross-sectional study design, by employing a pre-tested questionnaire to obtain demographic data and behavioural risk factors, and collected faecal samples for culture and subsequent identification of Blastocystis. DNA was extracted from Blastocystis isolates and the subtypes were identified using 7 subtype-specific sequenced-tagged site (STS) primers. Overall, 78 faecal samples were Blastocystis culture-positive (32.6%, 95% confidence interval: 26.7-38.6%). The majority (n=73, 93.6%) were single infections with one of the known subtypes, whereas 2 isolates consisted of 2

concurrent subtypes. The remaining 3 isolates could not be identified with the currently known STS primers. Risk factors for a Blastocystis infection were drinking unboiled water, consumption of raw water plants and pig ownership. The consumption of raw water plants was positively associated with subtype 1 infections, and drinking unboiled water with subtype 3 infections. In conclusion, human Blastocystis was common in this village in southwest China, and different subtypes were associated with distinct transmission routes or sources of infection, and hence Blastocystis subtypes might be linked to specific environmental compartments.

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CROSS-SECTIONAL SURVEYS AND SUBTYPE CLASSIFICATION OF HUMAN BLASTOCYSTIS ISOLATES FROM FOUR EPIDEMIOLOGICAL SETTINGS IN CHINA

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The prevalence and geographical distribution of the intestinal protozoa Blastocystis in humans across China is unknown, and the relative importance of different subtypes has yet to be investigated. We assessed the community prevalence and relative frequencies of different Blastocystis subtypes in four epidemiological settings in China, i.e., Shanghai municipality, Yongjia county (Zhejiang province), Eryuan county, and Menghai county (both Yunnan province). Blastocystis infection was detected with the culture method, and the subtype was identified with polymerase chain reaction using a set of subtype-specific primers. The prevalence at the four study settings was 1.9, 5.9, 18.4, and 32.6%, respectively. People aged greater than or equal to 60 years had a higher prevalence in the former two settings, Shanghai and Yongjia, whereas the highest infection rate was found among individuals aged 10-17 years in the latter two settings, Eryuan and Menghai. A higher prevalence was found in men in the former two settings but in women in the latter two settings. Five different Blastocystis subtypes were identified from the 192 isolates. Subtype 3 was the predominant type, followed by subtype 1. In conclusion, the epidemiology of Blastocystis varies across China.

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THE EVALUATION OF RECOMBINANT HOOKWORM ANTIGENS AS VACCINES IN HAMSTERS (MESOCRICETUS AURATUS) CHALLENGED WITH HUMAN HOOKWORM, NECATOR AMERICANUS

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We have previously reported the successful adaptation of human hookworm Necator americanus in the golden hamster, Mesocricetus auratus. This animal model was used to test a battery of hookworm (N. americanus and Ancylostoma caninum) recombinant antigens as potential vaccine antigens. Hamsters immunized a leading vaccine candidate N. americanus-Ancylostoma secreted protein 2 (Na-ASP-2) and challenged with N. americanus infective larvae (L3), resulted in 30-46.2% worm reduction over the course of three vaccine trials, relative to adjuvant controls. In addition, significant reduction of worm burdens was also observed in the hamsters immunized with adult hookworm antigens A. caninum aspartic protease 1 (Ac-APR-1); A. caninum-glutathione-S transferase 1 (Ac-GST-1) and Necator cysteine proteases 2 (Na-CP-2) (44.4%, 50.6%, and 29.3%, respectively). Our data on the worm burden reductions afforded by these hookworm antigens approximate the level of protection reported previously from dogs challenged with A. caninum L3, and provide additional evidence to support these hookworm antigens as vaccine candidates for human hookworm infection. The hamster model of N. americanus provides useful information for the selection of antigens to be tested in downstream vaccine development.

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ARTEMETHER AND TRIBENDIMIDINE LACK ACTIVITY IN EXPERIMENTAL TREATMENT OF PARAGONIMUS WESTERMANI IN THE DOG

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Artemether and tribendimidine are active against several trematode species, but no data are available regarding the lung fluke Paragonimus westermani. We infected six dogs with 100 P. westermani metacercariae each. At day 103 post-infection, four dogs were treated orally for 3 days with either artemether (total dose, 66.7 and 75 mg/kg) or tribendimidine (total dose, 100 mg/kg). The remaining dogs were left untreated and served as control. Sixteen days after the final dosing, dogs were killed, and P. westermani flukes were recovered from the lungs and

counted. Neither artemether nor tribendimidine showed activity against P. westermani at this dose regimen in dogs.

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§5. 研究生毕业论文研究报告摘要

淮河流域疟疾监测指标筛选及预测方法研究

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[目的] 分析淮河流域疟疾流行的态势,筛选适用于该区域疟疾监测的指标,探索有效的疟疾预测方法。

[方法] 利用 ERDAS8.6 软件对 MODIS 图像进行文件格式转换和投影变换,运用 ArcGIS8.3 软件提取并合成各种 NDVI 及 LST 值。运用 Kriging 法,获得淮河流域近 3 年 不同区域尺度上疟疾流行的空间分布图,观察疟疾流行的态势。运用 Spearman 等级相关、 多元线性回归分析、主成分和因子分析方法从遥感生态学替代指标、气象因素以及社会因 素三个方面筛选疟疾监测指标。运用时间序列分析和判别分析法构建适用于淮河流域疟疾 预测的模型。

[结果] 淮河流域东北部是疟疾的相对高发区,从 2004 至 2006 年,疟疾的流行强度增加,流行范围扩大。流域内 NDVI 的丰度大且覆盖广,年均极大 NDVI (VImax_y) 与疟疾年发病率呈正相关,平均植被覆盖量在第一公因子上载荷较大,极端植被覆盖量在第二公因子上载荷较大。疟疾月发病率与近 3 个月的平均极大 LST (LTmax₀₁₂)的相关性较强。多元线性回归分析显示:当月与之前 1 月的平均气温(Tmean₀₁)和之前 1 月的发病率(I₁) 能解释淮河流域疟疾月发病率变动的 72.2%,能解释怀远县疟疾月发病率变动的 73.2%。前期气象因素在第一公因子上载荷较大、近期气象因素在第二公因子上载荷较大。纱门户率(X₁,β=-0.109,P <0.01),人均蚊帐数(X₂,β=-9.762,P <0.05),之前 1 年疟疾发病率经 Box-Cox转换,λ=0.337)呈负关联,而露宿率(X₆,β=0.119,P <0.05),之前 1 年疟疾发病率(X₉,β=0.033,P <0.01)与Y'呈正关联。构建的 ARIMA 模型能在三个不同区域尺度上较好地反映疟疾发病率的时序变动趋势,拟合及预测值的动态趋势与实际情况基本一致。建立判别函数的判别准确率在 85%以上。

[结论] 近年来淮河流域疟疾的流行强度增加,流行范围扩大,高发区以流域东北部为中心向西、南方向扩展;该区域的疟疾流行总体上处于上升阶段。VImax_y适用于大范围疟疾年发病率监测; LTmax₀₁₂适用于大范围疟疾月发病率监测。Tmean₀₁与 I₁联合运用是更佳的疟疾疫情短期(月)监测指标。X₁,X₂,X₆,X₉等指标是在较长时期(3年左右)内进行疟疾发病率监测的好指标。构建的ARIMA 模型能在不同尺度上较好地反映以月为单位疟疾发病率的时序变动情况,构建的判别函数能准确地判断高发月份的出现时间。

日本血吸虫病贝叶斯时空模型的建立

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本研究结合应用贝叶斯模型、GIS 和 RS 等技术,探讨贝叶斯统计方法估计人群感染率 的可行性以及仅用血清学检查资料估计感染率的可能性;探讨小尺度下(以村为单位)湖 区某县人群血吸虫血清学阳性率和人群感染率的时空分布格局和影响因素,并进行短期预 测;分析和比较大尺度下(以县为单位)不同环境类型流行区(湖区和山区)的人群血吸 虫血清学阳性率时空分布规律和影响因素,为我国血吸虫病防治策略的制定和调整提供参 考依据。

结果显示:1)"采用 ELISA 和 Kato-Katz 联合试验数据"与"只采用 ELISA 试验数据" 这两种情景下所得到的人群感染率估计值相近,认为在大规模流行病学研究中仅采用血清 学检查结果估计人群血吸虫感染率是可行的。2)小尺度下,血吸虫血清学阳性和感染与 LST 均值呈正相关,与 NDVI 均值呈负相关,与流行村至水系距离也呈负相关,而与本文涉及 的经济学因素关系不大;当涂县人群血清学阳性率和感染率存在着明显的空间相关性,且 每年的空间变异有所不同,预测结果表明大多数既往感染和现症感染发生在长江及其支流 沿岸,认为长江及其支流环境是当涂县血吸虫病流行与传播中的一个重要影响因素,在预 测时考虑到空间相关性至关重要。3)大尺度下,在湖区,人群血清学阳性率与7[~]8 月 NDVI 均值、水体比例、草地等比例呈正相关;而在山区,人群血清学阳性率与1[~]2 月 NDVI 均 值和草地等比例呈正相关,与7[~]8 月 NDVI 均值呈负相关。湖区人群血清学阳性率存在很 强的空间相关性,且每年的变异程度不同,在与长江相通的鄱阳湖和洞庭湖邻近地区血清 学阳性率高而集中,而山区人群血清学阳性率空间相关性不强。

综合三部分研究结果,我们认为贝叶斯模型在人群血吸虫感染率估计和血吸虫病时空分析中具有重要的作用,有关时空分布规律的研究应在适宜的尺度下进行。建议:今后在研究血吸虫病时空分布规律时,对湖区宜采用大尺度范围的研究,而对山区宜采用小尺度范围的研究;在防治策略上,湖区可在较大范围内实施相同/相似的防治措施,而在山区需要在较小范围内实施有针对性的措施,以提高防治效果。

西藏林芝疟区人群 G6PD 缺乏的流行病学研究

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本研究对林芝地区墨脱、察隅波密、林芝、米林5个历史上有疟疾报告病例的县进行 了人群 G6PD 缺乏调查的现场采样,采集耳垂或指端血制成滤纸干血滴用荧光斑点法进行 G6PD 缺乏的实验室检测。同时搜集这5各县的历史发病数据及相关资料,进行整理分析, 阐明林芝地区疟疾流行情况,结合该地区人群 G6PD 缺乏的流行病学研究结果,进行综合 分析。

研究得出: (1)5个县共调查2333人,检出G6PD缺乏患者27例,阳性检出率为1.16%,

基因频率为 0.0168。墨脱县调查人数为 1 208 人,检出 G6PD 患者 21 例,阳性检出率为 1.74%,基因频率为 0.0230。察隅县检出 G6PD 患者 4 例,米林县检出 2 例,波密县和林 芝县均未检出 G6PD 患者。各县阳性检出率总体比较差异有统计学意义(χ²=10.57, P<0.05)。(2) 在检出的 27 例 G6PD 缺乏患者中男性 18 例,女性 9 例,男性多于女性。 男性与女性阳性检出率差异有统计学意义(χ²=4.72, P<0.05)。(3) 藏族中检出 G6PD 患者 6 例,阳性检出率为 0.64%,基因频率为 0.0118,女性杂合子发生率为 2.33%,女性纯 合子发生率为 0.01%。门巴族中检出 G6PD 患者 21 例,阳性检出率为 1.51%,基因频率为 0.0201,女性杂合子发生率为 3.94%,女性纯合子发生率为 0.04%。藏族和门巴族阳性检 出率差异无统计学意义(χ²=3.72, P>0.05)。(4) 林芝地区 1986-2005 年历年累积报告 疟疾病例 2 086 例,墨脱县累积报告病例数为 2 027 例,占总报告病例数的 97.17%,这些病例主要集中在墨脱县境内的雅鲁藏布江河谷地带的村镇,报告发病数较高的月份是 6~10 月份,其他各月均有报告,也多为墨脱县报告病例。

研究表明:(1)林芝疟疾流行地区人群G6PD缺乏症的基因频率为0.0168,表明该地区人 群中存在一定数量的G6PD缺乏症患者,对于该地区的疟疾防治工作有一定的影响。(2)林 芝地区疟区人群G6PD缺乏水平与海南、云南等省G6PD缺乏水平较高的人群相比相对较低, 在疟疾流行期,特别是暴发流行时,仍可用氯喹、伯氨喹八日疗法进行治疗。(3)本研究 首次对门巴族G6PD缺乏情况进行了描述性研究,为我国少数民族G6PD研究提供了一个重 要补充,也为群体遗传学、人类学的研究提供了有价值的研究资料。(4)林芝地区疟疾病例 主要集中在墨脱县境内的雅鲁藏布江河谷地带和察隅县境内的察隅河河谷地带,尤其是墨 脱县的疟疾流行程度较高,流行情况较为严重。(5)通过普查建立人群个体的G6PD缺乏档 案将对该地区的疟疾防治有重要意义。

喀什地区人源型黑热病时−空聚集性及其媒介分布的研究

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新疆维吾尔自治区的喀什绿洲是我国人源型黑热病的重点流行区,也是我国黑热病的 主要流行区之一。近十年来,喀什地区新发黑热病病例呈现逐年上升的态势。为了遏制黑 热病的进一步蔓延,及时、准确地掌握黑热病的人群和地理分布非常重要。本研究利用空 间统计学等方法探讨黑热病的人群感染状况、时间-空间聚集性以及媒介白蛉的空间、地 理分布,为今后黑热病预防控制工作提供新的研究方法和依据。

人群利什曼素皮试(LDT)阳性率与年龄有密切关系,LDT阳性率随年龄的增加有逐渐 增高的趋势; ELISA与LDT结果的比较揭示了当地黑热病的人群感染状况,免疫人群、易 感人群、现感染人群分别占36.15%,61.45%,2.41%。

黑热病时-空聚集性Scan分析表明喀什地区黑热病的发病为非随机分布,黑热病的发 病及分布存在明显的时间-空间聚集性,存在3个发病的高危聚集区及其对应的高发时间 框。黑热病在空间分布上的聚集性表明,在聚集区的聚集半径内,黑热病的发病危险要高 于此聚集半径之外的区域,表示了疾病的聚集性、趋向性,而在半径外的区域,则表现出

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病例分布的稀疏性、离散性。黑热病在时间分布上的聚集性表明在每个聚集区的时间框内, 黑热病的发病危险要显著高于此维度之外的其他时间。

媒介分布的研究揭示了户外白蛉的空间、地理分布情况以及户外白蛉分布与地貌类型 的关系。运用决策树分析进行 CART 分析,所得的蛉种与地貌类型关系分类树使我们对白 蛉的蛉种、栖性、孳生环境等方面的认识更加清晰。结果表明,研究地区户外白蛉蛉种与 调查点距村落距离、白蛉密度以及调查点地貌类型三个因素之间存在着密切联系。长管白 蛉主要分布在绿洲和荒地地貌类型中,长管白蛉的活动范围距离村落不超过 330.5 米;吴 氏白蛉往往分布在距离村落较远的半荒漠、荒漠以及砾漠地貌环境中。

运用 Kriging 法对研究地区白蛉的空间分布进行预测。利用 ArcGIS 进行空间自相关分析, Moran 指数 I 统计量为 0.1292 (*P*<0.01),白蛉密度的变异与距离有关,在空间上存在自相关性。当间距在自相关阈值 (*α* =0.031059)范围内时,白蛉密度的变异与距离有关。用球状模型拟合白蛉空间分布的半变异函数,交叉核验结果: ME=-0.06093, RMSE=1.886, ASE=1.613, RMSSE=1.074,表明所建立的模型能对已知白蛉调查点密度进行无偏、最优估计,绘制的预测图能很好的反映研究地区白蛉的空间分布特征。

我国不同人群人芽囊原虫感染情况调查与分子流行病学研究

李兰花(硕士研究生) 导师: 周晓农

本研究用体外培养法作为流行病学调查手段对我国不同人群人芽囊原虫感染情况进行了横断面调查,以了解不同人群的感染率;然后运用特异性 STS(测序标签位点,sequ enced-tagged sites)引物 PCR 扩增的方法分析来自不同人群的人芽囊原虫分离株的基因多态性,了解各调查人群基因型的分布;最后对其中一个人群进行了详细的问卷调查,分析影响人芽囊原虫及不同基因型感染的因素,初步探讨人芽囊原虫不同基因型与生物学特性间的关系。本研究的调查人群分别来自:云南省大理白族自治州洱源县居民、西双版纳傣族自治州勐海县居民、上海市徐汇区居民和青浦区居民、浙江省温州市永嘉县人民医院病人。

结果表明,徐汇、青浦、永嘉、洱源和勐海所调查人群人芽囊原虫感染率分别为 1.9 %、3.2%、5.9%、18.4%和 32.6%。在流行程度不同的地区,人芽囊原虫感染的分布特征有 所不同,人芽囊原虫感染率与年龄的关系呈现"峰值位移"现象,即:感染率越高的地区, 感染率高峰出现在越低的年龄组,而感染率越低的地区感染率高峰出现在越高的年龄组。

STS-PCR 分析的结果表明,我国人芽囊原虫分离株存在着广泛的基因多态性。本研究 共得到 5 个已知基因型(subtype 1、2、3、4、6)和 1 个新基因型,各调查人群间基因 型的分布无显著性差异。所有基因型当中,subtype 3 所占比重最大,其次是 subtype 1。

对勐海县弄养村村民的横断面调查结果表明,钩虫、结肠内阿米巴和微小内蜒阿米巴 感染与人芽囊原虫呈正相关关系。问卷调查结果表明,饮用生水和饲养猪与人芽囊原虫感 染呈正相关,而生食猪肉与感染呈负相关。分别研究不同基因型与各个因素间的关系时发 现,结肠内阿米巴感染仅与人芽囊原虫 subtype 1 感染呈正相关,而钩虫感染和微小内蜒 阿米巴感染与 subtype 3 感染呈正相关;生食水生植物(当地主要指水芹菜,一种野菜) 114 与 subtype 1 感染呈正相关,而饮用生水仅与 subtype 3 感染呈正相关。提示人芽囊原虫 不同的基因型在外部生存的微环境、传播途径等方面可能存在着差异。

华支睾吸虫排泄分泌性诊断抗原的筛选及相关基因的克隆表达

卢艳(硕士研究生) 导师:许学年

[目的] 用华支睾吸虫的排泄分泌抗原(excretory-secretory antigen, ES antigen)免疫小鼠所获的特异性鼠血清筛选华支睾吸虫的 cDNA 文库,定向寻找特异、敏感的排泄分泌性抗原的基因克隆,并评估重组抗原在诊断中应用的前景。

[方法] 1. 用华支睾吸虫的ES抗原免疫小鼠所获的鼠血清筛选cDNA文库,挑选阳性克隆;双酶切鉴定,基因序列测定,同源性分析,并预测基因编码蛋白的结构和功能; 2. 将挑选的阳性克隆片段插入pET系列载体,IPTG诱导重组蛋白在*E. coli BL21 (DE3)*菌株中表达,鉴定重组蛋白的可溶性,并根据重组蛋白溶解性的不同,用QIAGEN的Ni-Agarose 柱亲和层析进行纯化; 3. 通过Western Blot以及ELISA方法评估所获重组蛋白的免疫反应 性。同时,以纯化的重组蛋白免疫小鼠,制备小鼠多抗血清,使用重组蛋白的昆明系小鼠 多抗血清评价其诊断价值。

[结果] 1. 从华支睾吸虫 cDNA 文库筛选出 49 个阳性克隆,并测定了部分阳性克隆的 DNA 序列,通过 GeneBank 进行对比分析,根据序列的同源性特征,将所获阳性克隆归为 4 大类; 2. 从获得的阳性克隆中挑选 4 个:8A、19-2C、22B 和 24A 作进一步研究,成功 表达了 3 个阳性克隆:19-2C、22B 和 24A,表达产物的分子量分别约为 13kDa、40kDa 和 41kDa,其中 22B 的表达产物为可溶性蛋白,19-2C、24A 的表达产物为不可溶性蛋白,分 别将重组蛋白进行纯化;3. 纯化的重组蛋白 Western Blot 结果表明 22B 重组蛋白免疫的鼠 血清可以识别 ES 抗原中约为 46kDa 大小的条带,19-2C 重组蛋白可被 ES 抗原免疫鼠血清 所识别。以 22B 重组蛋白免疫鼠血清为一抗的间接 ELISA 方法检测华支睾吸虫病人粪样, 敏感性为 100%;而检测正常人粪样未出现阳性。19-2C 作为包被抗原检测华支睾吸虫病人 血清的敏感性为 83.3%,检测非流行区的正常人假阳性率为 8.3%;与血吸虫病人和并殖吸 虫病人的交叉反应率分别为 5.6%和 8.7%。

[结论] 1. 以华支睾吸虫的 ES 抗原免疫鼠血清从华支睾吸虫的 cDNA 文库筛选获得的 3 个阳性克隆 19-2C、22B 和 24A 在大肠杆菌中表达成功,并被纯化; 2. Western Blot 结果 表明 19-2C、22B 重组蛋白具有较好的免疫反应性,该两个基因在国内外尚未见报道,其 编码蛋白有可能作为诊断的候选抗原; 3. 本研究建立的间接 ELISA 方法具有较高的敏感 性和特异性,对测定人群中华支睾吸虫的感染可能有较好的应用前景。

ISSR 技术应用于我国利什曼原虫系统发生的研究

王勇(硕士研究生) 导师: 汪俊云

利什曼原虫种类繁多,他们在流行病学、生物学及感染宿主的临床症状等方面均存在差异。我国不仅存在能对人致病的婴儿利什曼原虫和杜氏利什曼原虫,也存在仅感染动物的利什曼原虫种株,且其宿主和媒介亦具多样性和交差性。同种利什曼原虫不同地域分离株如婴儿利什曼原虫,可导致不同的临床症状。因此,开展对利什曼原虫系统发生的研究不仅有助于利什曼病的分子流行病学研究,也有助于虫株鉴定,对于选择恰当的治疗措施及制定合适的控制策略也非常必要。

本研究通过选用 21 种单引物对 30 株有代表性的利什曼原虫分离株进行了简单重复序 列间区聚合酶链式反应(ISSR-PCR)扩增,经非变性聚丙烯酰胺凝胶电泳配合银染方法获 得 ISSR 带谱, 共计 866 条多态性条带, 再根据虫株间 ISSR 带谱的相似程度和相异程度计 算出 Jaccard 相似系数和 Nei 遗传距离。在此基础上分别构建了 UPGMA 和 Neighbour Joining 系统发生树。结果表明这 30 株虫株可聚类为 6 组: 我国可致人利什曼病的虫株与 杜氏利什曼原虫参照株 "DD8" 为一组: 婴儿利什曼原虫参照株 "LEM"、硕大利什曼原虫 参照株 "5AS"、热带利什曼原虫参照株 "K27" 以及埃塞俄比亚利什曼原虫参照株 "L100" 为一组:属于 Viannia 亚属的巴西利什曼原虫参照株 "2903" 没有与上述属于利什曼亚属 的虫株聚在一起,单独为一组;都兰利什曼原虫参照株"3720"与我国新疆克拉玛依和奇 台具的以大沙鼠为宿主的都兰利什曼原虫分离株聚为一组: 沙鼠利什曼原虫参照株"GER"、 新疆克拉玛依白碱滩大沙鼠分离株 "K-7"和内蒙古额济纳旗大沙鼠分离株 "E154" 聚为 一组:内蒙古额济纳旗的蜥蜴分离株"LIZ"、新疆克拉玛依阿帕克司白蛉分离株"K-E" 和一株甘肃内脏利什曼病病人的分离株"LUO"为一组。此外,对虫株的 ISSR 特征进行了 主成分分析。几种方法的聚类结果与传统的分类方法鉴定结果符合程度相当高,表明此方 法可用于虫株的快速鉴定,本研究的结果显示以前未被鉴定的分离株"K-E"、"Q-4"和 "E154"分别为蜥蜴利什曼原虫、都兰利什曼原虫和沙鼠利什曼原虫。

本研究阐明了我国利什曼原虫虫株间的亲缘关系,研究结果对我国黑热病防治策略制 定有借鉴意义,同时也为快速鉴定利什曼原虫虫株提供了简便有效的方法。

湖沼型地区生态环境改变对新螺区形成的影响研究

杨德平(硕士研究生) 导师: 郭家钢

我国现有钉螺面积 38.5 亿 m²,其中 94%以上分布在湖沼地区。湖沼地区具有"冬陆 夏水"、水位难以控制和洪水期间多数滩地被淹没的特点。由于近年来长江水位发生很大 变化,这种变化使钉螺孳生地也随之改变,一些原来无钉螺孳生的地方,演变为适宜钉螺 孳生的洲滩;一些原来消灭了钉螺的洲滩由于洪水淹没造成钉螺的扩散,重新变成钉螺的 孳生地。传统的查螺方法费时、费力且旷日持久,如何有效地监测钉螺孳生地对我国血吸 虫病的防治具有重要意义。

本研究选取江西省南昌具五洲头和余干具长江洲作为现场,其中五洲头 2002 年发现 钉螺,为新的钉螺孳生地,余干县长江洲 1953 年发现钉螺,为历史有螺区。首先,采用 传统的流行病学方法分析两地的查螺和查病资料,结果显示:五洲头活螺密度较长江洲低, 但其钉螺自然感染率较长江洲高(PO.05);五洲头附近村民的感染率也显著高于长江洲 (*P*(0.01)。由此可看出,新螺区形成之初其钉螺以面积增长为主,密度较低:由于历史 上未曾开展查螺、灭螺工作,加上人畜活动频繁,故其钉螺的感染率和附近村民的感染率 高于历史有螺区。然后,本研究应用遥感技术对两地区环境改变进行反演,收集1998~2004 年四景鄱阳湖 TM 图像,对图像进行辐射校正、大气校正和几何校正后,进行非监督分类, 穗帽变换,并提取归一化植被指数(NDVI)。对五洲头的 NDVI 值进行纵向比较,同时与长 江洲进行横向比较。结果表明: 1998 年五洲头植被盖度、NDVI 值都显示其不适宜钉螺孳 生,但 1998 年洪水过后,到 1999 年其植被盖度达到 60%以上,NDVI 值也升高(与 1998 年相比 P<0.01), 1999年其环境特点已适宜钉螺孳生; 与长江洲的横向比较看出, 其 NDVI 值和绿度值都低于长江洲(PC0.001),由此可以推断,五洲头滩地在 1998 年洪水来临之 前并不适宜钉螺孳生,但洪水不仅带来了钉螺,而且使其植被生长旺盛,生态环境发生了 改变,于是钉螺在此处 "落户"。1999 年五洲头已有钉螺迁入,只是钉螺的密度较低,范 围也不大。通过收集湖沼型地区多时相 TM 图像,对其生态环境改变进行反演,提取环境 指标,如某地其植被盖度在 20%以上,NDVI 值达到 0~0.2,绿度值达到 0~50,则认为该 地环境已适宜钉螺孳生,由此可以找出潜在的钉螺孳生地。最后,提取 1998~2005 年五 景鄱阳湖 TM 图像的水域范围,计算水域面积,同时,收集 1998~2005 年江西省新发现的 钉螺孳生地面积,对水域缩小与新螺区面积变化进行相关性分析,发现水域面积的减少影 响钉螺的扩散和新螺区的形成。

日本血吸虫酪氨酸激酶基因克隆表达及免疫研究

臧炜(硕士研究生) 导师:曹建平

血吸虫病(schistosomiasis)作为人兽共患寄生虫病,在我国仍然是一个重要的公共卫生问题。疫苗作为一种经济、长效的防治措施,20多年来已有酶性、肌性、膜相关性蛋白等多种血吸虫病疫苗候选抗原开展了动物保护性试验,但总体来说诱导的免疫保护力并不理想。鉴于虫卵是血吸虫病最主要的致病因子,因而还可以设想从干预血吸虫生殖的途径去寻找新型的疫苗候选抗原分子。对曼氏血吸虫的研究表明很多性别相关蛋白对血吸虫发育、生殖有着重要的调控作用,因此该领域的探索不仅有助于研制有效的抗血吸虫生殖疫苗,而且能为阐明此类分子在血吸虫发育及生殖活动中的功能奠定基础。

本研究探讨了日本血吸虫新基因——即性别相关的信号分子酪氨酸激酶 TK4 (tyrosine kinase 4)分子作为疫苗候选抗原的价值。首先,通过分子克隆技术对该编 码基因的保守区片段进行了克隆表达,扩增出一大小为 582 bp 的基因片段,序列分析表

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明该片段与曼氏血吸虫酪氨酸激酶 TK4 (SmTK4) 保守区基因序列的同源性为 91%, 推导的氨基酸序列同源性为 98%, 理论预测分子量为 22 kDa。生物信息学分析显示该蛋白具有多个酶活性位点。随后,利用荧光定量 PCR 技术证明了该基因为日本血吸虫一种性别差异基因, 雄虫 TK4 的 mRNA 表达量为雌虫的 18 倍。在 C57BL/6 小鼠免疫试验中,重组蛋白(reSjcTK4) 加 Montanide ISA 206 佐剂免疫组减虫率、肝组织减卵率和每对成虫肝组织减卵率分别为 27.3%、32.0%和 30.5%; 核酸疫苗免疫组分别为 20.3%、26.0%和 27.5%。该结果表明日本 血吸虫酪氨酸激酶 TK4 保守区重组抗原与核酸疫苗均诱导小鼠产生了部分抗感染和抗生殖 免疫保护作用。

本研究成功克隆表达了日本血吸虫酪氨酸激酶 TK4 保守区编码基因,为接下来获取编 码该蛋白的全长基因及研究其完整功能奠定了基础。免疫/攻击感染小鼠模型试验结果表 明该分子为日本血吸虫病疫苗新的候选抗原分子,对该抗原的深入研究将有助于构建血吸 虫病多价疫苗。

卫氏并殖吸虫感染循环抗原检测方法的建立与应用

陈韶红(公共卫生管理硕士) 导师:周晓农

[目的]1.制备抗卫氏并殖吸虫的多克隆抗体。应用建立的特异性多抗(PW-IgG)方法 检测人群并殖吸虫病早期感染情况,探讨该方法检测人群并殖吸虫病中的应用价值。2.观 察人工感染卫氏并殖吸虫的犬血清中特异性抗体和循环抗原的动态变化,为并殖吸虫病的 诊断和疗效考核提供科学依据。

[方法] 1. 按常规方法从阳性溪蟹中分离卫氏并殖吸虫囊蚴并定量感染家犬,从感染 后第4天开始采血分离血清,用 dot-ELISA 法检测犬血中循环抗原(CAg),观察从4天 到133 天之间感染犬血中循环抗原(CAg)及对感染卫氏并殖吸虫2个月的犬用吡喹酮治 疗前后血清循环抗原(CAg)的动态变化;用 ELISA 法检测从感染2W 至 19w 不同间隔时间 内犬血清中特异性抗体(Ab)的动态变化。2. 用建立的多抗(PW-IgG)dot-ELISA 检测 方法对并殖吸虫临床诊断病人、并殖吸虫流行区人群、并殖吸虫早期感染者及其他寄生虫 病人进行循环抗原的检测,同时运用 ELISA 法检测并殖吸虫病人、并殖吸虫病流行区人群 血清中的特异性抗体,从而对 PW-IgG 检测循环抗原方法作出评价。

[结论]1. 成功制备抗卫氏并殖吸虫成虫的多克隆抗体,由此建立的用多抗检测肺吸虫 病循环抗原的 dot- ELISA 方法,可辅助诊断肺吸虫病的早期感染和疗效考核。2. 犬在感 染卫氏并殖吸虫后的 10~56 天内,用多抗 (PW-IgG) DOT-ELISA 法可在其血清中检测到循 环抗原 (CAg),得出在这段时间检测循环抗原具有早期诊断价值。犬在感染卫氏并殖吸虫 后特异性抗体 (Ab) 在感染 4 周左右出现,抗体最高滴度维持时间为 4 周~12 周。并一直 维持在一个较高水平。但感染犬在用吡喹酮药物治疗后有短暂的循环抗原出现,一周后逐 渐消失。

§ 5. ABSTRACTS OF GRADUATE STUDENT DISSERTATIONS

RESEARCH REPROT

STUDY ON THE MONITORING INDICATORS AND PREDICTION METHODS FOR MALARIA IN THE HUAIHE RIVER VALLEY

ZHU Ji-min (PhD student) TUTOR: TANG Lin-hua

[Objective] To analyse the malaria epidemic situation, screen monitoring indicators for malaria and explore effective prediction methods for malaria epidemic in the Huaihe River Valley.

[Method] ERDAS8.6 software was used to do file format conversion and projection transformation for MODIS images. ArcGIS8.3 software was applied to extract and synthesize all kinds of NDVI and LST. Kriging interpolation method was used in different scales to show the malaria epidemic features of the spatial distribution in the Huaihe River Valley, so to observe the changes of malaria epidemic. Spearman rank correlation, multiple linear regression analysis, principal component analysis and factor analysis were conducted to select indicators for malaria monitoring. Time serial analysis and discriminant analysis were applied to construct models for malaria prediction.

[**Results**] Both malaria epidemic intensity and epidemic scale increased from 2004 to 2006, with the relative higher malaria incidence happened in the northeast in the Huaihe River Valley. Abundance and extensive coverage of NDVI was founded in the region, with the greatly average annual NDVI (VImax y) had a positive correlation to annual malaria incidence. The first common factor could be explained as average vegetation coverage factor, and the second as extreme vegetation coverage factor. Monthly malaria incidence showed a strong correlation with the nearly three-month greatly average LST (LTmax₀₁₂). The regression analysis showed that: the average temperature of this month and the last month ($Tmean_{01}$), combined with the malaria incidence of last month (I_1) could explain more than 72% for the variance of malaria incidence. The first common factor could be explained as pre-meteorological factor, and the second as recent meteorological factor. Variables of X₁(the rate of family using door-window screen, β =-0.109, P<0.01) and X₂ (bednet each owner, β =-9.762, P<0.05) had negative association to Y' (transformed from malaria incidence by Box-Cox method, λ =0.337), while X₆ (the rate of sleeping outdoors, $\beta=0.119$, P<0.05) and X_9 (the malaria incidence of last year, $\beta=0.033$, P<0.01) had positive association to Y'. The ARIMA model formed better reflected the incidence of malaria temporal changes trend in three different spatial scales, with a consistent fluctuation

between actual incidence and incidence from ARIMA. The discriminant function formed had a higher distinguish accuracy than 85%.

[Conclusion] Both malaria epidemic strength and epidemic scale increased in recent years in the Huaihe River Valley, an increasing spread for malaria epidemic was seen from the northeast valley to west and south in the following year. Variables such as VImax_y was good indicator for annually malaria epidemic monitoring when performed in large scale, while $LTmax_{012}$ was good one for monthly malaria monitoring when did in large scale. Tmean₀₁ combined with I₁ would be better for monthly malaria incidence monitoring. X₁, X₂, X₆ and X₉ were good indicators for annual malaria monitoring when performed during a little longer periods, such as 3 years. The ARIMA model and the discriminant function formed could do good work when carried out for malaria prediction in the Huaihe River Valley.

BAYESIAN SPATIO-TEMPORAL MODELING OF SCHISTOSOMIASIS JAPONICA

WANG Xianhong (PhD student) TUTOR: ZHOU Xiaonong

In order to provide reference evidence for constituting and adjusting the control strategies of schistosomiasis, Bayesian models, GIS and RS methods were used: 1) to explore if the community prevalence of Schistosoma japonicum infection can be estimated by Bayesian approach and if it can be estimated based on data from serological test alone; 2) to explore the spatio-temporal pattern and risk factors of village-level seroprevalence as well as prevalence of S. *japonicum* infection in a small scale and make short-term prediction; and 3) to analyze and compare the spatio-temporal structure and risk factors of county-level seroprevalence of S. japonicum infection in different environmental settings, i.e., lake region and mountainous region, in a large scale. It was shown that: 1) Using data from ELISA alone or both ELISA and Kato-Katz tests resulted in similar prevalence estimates and is feasible to employ only serological test to estimate prevalence of S. japonicum infection in large-scale epidemiological settings. 2) In a small scale, Seroprevalence as well as prevalence of S. japonicum infection were positively associated with the mean of LST and negatively correlated with the mean of NDVI as well as the distance from an endemic village to water body. While the relationships between S. japonicum infection and socio-economic covariates were as small as neglectable. Apparent spatial correlation with variability different from one year to another presented for village-level seroprevalence and prevalence of S. japonicum infection as well. The prediction map showed that most of the former or current infections occurred near the water body, especially the Yangtze River. We conclude that the Yangtze River and its branches played the most important role in transmission of schistosomiasis in Dangtu county and it is crucial to account for the spatial correlation when making prediction in a small scale. 3) In a large scale, the seroprevalence was positively associated with the mean of LST from July to August, the proportion of water body

and that of grassland in lake region, while the seroprevalence was positively associated with the mean of LST from January to February and the proportion of grassland, and negatively associated with the mean of LST from July to August in mountainous region. In Lake Region, strong spatial correlation with variability different from one year to another presented for seroprevalence. Places with relatively high prevalence were concentrated near Poyang Lake and Dongting Lake connected to the Yangtze River. In mountainous region, on the other hand, the spatial correlation was weak or not significant. In conclusion, Bayesian modeling is very important to prevalence estimation and spatio-temporal analysis of schistosomiasis and the study on spatio-temporal distribution should be carried out in an appropriate scale. It is suggested that: 1) a large scale is preferred for studies in lake region and a small one for mountainous region, in order to understand the spatio-temporal distribution of schistosomiasis; 2) same or similar measures can be implemented in a large scale of lake region, while specific measures should be applied to a small unique region of mountainous area, in order to improve the efficacy of control efforts.

EPIDEMIOLOGICAL STUDY OF G6PD DEFICIENCY IN THE POPULATION OF MALARIA-ENDEMIC AREAS IN LINZHI PREFECTURE OF TIBET

CHANG Fu-Xing (MSc student) TUTOR: TANG Lin-Hua

[Objective] By investigating the deficiency of G6PD (glucose-6-phosphate dehydrogenase) in the population of malaria-endemic areas in Motuo, Chayu, Bomi, Linzhi and Milin County, where malaria cases were reported in Linzhi Prefecture of Tibet, China, and collect lobe or fingertip blood using the filter paper which can be taken for the G6PD deficiency test using the G6PD fluorescence assay method, Collecting the malaria epidemiological data from the 5 counties at the same time, then making a comprehensive analysis on the local malaria epidemiology, these studies can provide useful suggestions and information for malaria control.

[Results] (1) Totally, 2 333 samples were tested in 5 counties, among which 27 were positive for G6PD deficiency detection (positive rate=1.16%, gene frequency=0.0168). In Motuo County, 1 208 samples were investigated, patients with G6PD deficiency were 21 (positive rate=1.74%, gene frequency=0.0230). Another 4 and 2 patients with G6PD deficiency were detected in Chayu County and Milin County, respectively. No patients were detected in Bomi and Linzhi County. The overall difference between the positive rates in different counties was statistically significant (χ^2 = 10.57, P <0.05). (2)Among the 27 G6PD deficiency cases, male patients (18 cases) were more than female patients (9 cases) (χ^2 = 4.72, P <0.05). (3) In Tibetans, G6PD deficiency cases were detected with positive rate 0.64%, gene frequency 0.0118, female heterozygous rate 2.33%, and female homozygous rate =0.01%. In Monba, 21 G6PD deficiency cases were detected with positive rate 1.51%, gene frequency 0.0201, female

heterozygous rate 3.94%, and female homozygous rate 0.04%. There was no statistically significant difference between these two groups (χ^2 = 3.72, P >0.05). (4) In Linzhi District, 2 086 malaria cases in total were reported from 1986 to 2005, 2 027 cases of which were from Motuo County (2027/2086=97.17%). Most reported cases were from Yarlung Zangbo River valley area in Motuo County. The malaria incidence peak is bewteen June and October.

[Conclusion] (1) The gene frequency of G6PD deficiency is 0.0168 in the population of malaria-endemic areas in Linzhi Prefecture. It shows there are some patients with G6PD deficiency in the areas and it will affect the malaria prevetion and control. (2) The level of G6PD deficiency in the population of malaria-endemic areas in Linzhi Prefecture is lower than some population in Hainan and Yunnan Provinces, where the level of G6PD deficiency is high in the population. In malaria-endemic period, and in particular outbreak, the 3-days chloroquine and 8-days primaquine therapy are still recommended for the case treatment. (3) This study is the first descriptive study of G6PD deficiency for Monba. It provides an important complement for Minority as well as provided valuable research data for population genetics and anthropological research. (4) In Linzhi Prefecture, malaria cases were mainly concentrated in the Yarlung Zangbo River valley strip of Motuo County and the Chayu River valley strip of Chayu County, especially Motuo County with high prevalence of malaria, the prevalence of more serious. (5) It will be of great significance for the malaria prevention and control establishing the individual file of G6PD deficiency in the population of the areas by cencus.

TIME-SPACE CLUSTERING ANALYSIS AND VECTOR'S DISTRIBUTION OF ANTHROPONOTIC KALA-AZAR IN KASHGAR REGION OF XINJIANG

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Kashgar Region of Xinjiang Uigur Autonomous Region is not only one of the major epidemic regions of anthroponotic kala-azar, but also one of the most important epidemic regions of kala-azar in China. In the last decade, the number of new incidences of kala-azar increased gradually. In order to control the spread of plague, the population and geographic distribution of kala-azar should be known accurately and timely. In this study, spatial statistics and some other methods were applied to the study related to population infected status, vector's distribution and time-space clustering of kala-azar, so as to provide new methods and evidences for the future prevention and control of kala-azar.

There was a close relation between age and the positive rate of Leishmania dermal test (LDT), the positive rate of LDT increased gradually with age increasing. The compare of results of ELISA and LDT revealed the population infected status of kala-azar. In the whole population,

the proportion of the immune, the susceptible and the current infected was 36.15%, 61.45% and 2.41% respectively.

It was showed that the distribution of kala-azar incidences of Kashgar region was non-random by Scan analysis of time-space clustering method. There existed obvious time-space clustering of kala-azar incidences, and with three high risk clustering zones and corresponding time frame. On the aspect of spatial dimension, inside the clustering radius, viz. clustering zone, the relative risk (RR) of kala-azar incidence was much higher than that of outside of the zone. In the zone, kala-azar incidences exhibited clustering and inclination. On the contrary, it exhibited sparseness and dispersion. On the aspect of temporal dimension, inside the time frame, the RR of kala-azar incidence was distinctly higher than that of beyond the time frame.

Study of vector's distribution reveals the relationship between outdoor sandfly and physiognomy, the distribution characteristics of outdoor sandfly. Decision tree software was applied to do CART analysis. The classification tree generated by CART analysis make us realize the sandfly species, inhabited environments, and breeding ground much more clear. CART analysis results illustrated there was an affinity between outdoor sandfly species and distance of investigation site from village, sandfly density, physiognomy type. *P. Longiductus* mainly distributed in oasis and wasteland, within a distance of 330.5 meters from villages. *P. wui* mainly distributed in semi-hungriness, hungriness and the Gobi, which was usually far away from villages.

Kriging was applied to predict spatial distribution of sandfly in study area. Exploratory spatial data analysis (ESDA) was carried out to examine data's spatial autocorrelation, the statistics *I* of Moran index equaled 0.1292 (*P*<0.01), so there existed autocorrelation spatially. Variation of sandfly density related with distance, when the distance of two investigation sites was in the scope of autocorrelation threshold ($\alpha = 0.031059$). Use spherical model to fit semivariogram of spatial distribution of sandfly. Results of model's cross-validation showed ME=-0.06093, RMSE=1.886, ASE=1.613, RMSSE=1.074, which demonstrated the prediction map was the optimal and unbiased model, could estimate sandfly distribution in the study area.

CROSS-SECTIONAL SURVEYE AND MOLECULAR EPIDEMIOLOGICAL STUDY OF *BLASTOCYSTIS HOMINIS* IN DIFFERENT POPULATIONS IN CHINA

LI lanhua (Msc student) TUTOR: ZHOU Xiaonong

We conducted a molecular epidemiological survey on *B. hominis* in five different populations from distinct epidemiological settings in China. The objectives of the present study were (i) to determine the prevalence of *B. hominis* in five different populations in China, stratified by age and sex, using a sensitive culture technique; (ii) to assess the relative frequency of different *B. hominis* subtypes and the local heterogeneity therein with a set of subtype-specific

STS (sequenced-tagged site) primers; and (iii) to identify risk factors for infections with different subtypes in one of the populations. The studied populations came from Xuhui district and Qingpu district of Shanghai municipality, People's hospital of Yongjia county (Zhejiang province), Eryuan county (Yunnan province) and Menghai county (Yunnan province).

Prevalence at the five study sites was 1.9%, 3.2%, 5.9%, 18.4% and 32.6%, respectively. Demographic characters of prevalence were shown different in populations from distinct epidemiological settings. People aged ≥ 60 years had the highest prevalence in the low-endemicity populations, whereas the highest infection rate in the high-prevalence populations was found among individuals aged 10-19 years. This phenomenon, the so-called peak shift, is well known feature in parasite epidemiology.

B. hominis isolates have extensive genetic diversity and 5 different subtypes were identified in our study and one was identified as a new subtype. Subtype 3 was the predominant type, followed by subtype 1.

A cross-sectional epidemiological study on *B. hominis* was performed in the studied population in a village from Menghai County to explore relationship between *B. hominis* or specific subtype infection and other parasites and to explore risk factors for infection with specific subtypes. It was shown that infection of hookworm, *Entamoeba coli* and *Entamoeba nana* was positive association with *B. hominis* infection. *E. coli* was only positively related with subtype 1 infection while hookworm and *E. nana* with subtype 3 only. While drinking unboiled water and pig ownership were risk factors for *B. hominis* infection, the consumption of raw pork was protective. The consumption of raw water plants was positively associated with subtype 1 infections, and drinking unboiled water was a risk factor for subtype 3 infections. We conclude that different subtypes of *B. hominis* are associated with distinct transmission routes or sources of infection. *B. hominis* subtypes might be linked to specific environmental or biological niches.

IMMUNOSCREENING OF *CLONORCHIS SINENSIS* EXCRETORY-SECRETORY ANTIGEN AND CLONING, EXPRESSION OF ASSOCIATED GENES

LU Yan (MSc student) TUTOR: XU Xue-nian

[Objective] The cDNA library of *Clonorchis sinensis* was immunoscreened to obtain sensitive and specific excretory-secretory antigen for immunodiagnosis of *Clonorchiasis*. The selected positive clones were expressed and preliminary evaluated on their value of diagnosis.

[Methods] 1. The cDNA library of *Clonorchis sinensis* was immunoscreened with mouse antisera immunized by excretory-secretory antigen (ES antigen) to obtain positive clones. The inserts of positive clones were digested by *EcoR I/Xho I* to identify their length. Then the obtained genes were sequenced and analyzed their homology. The proteins which encoded by the genes were predicted their structure and function. 2. The target gene sequences were

amplified and subcloned into pET28-a or pET28-b vector plasmids respectively. The recombinant proteins were expressed under the induction of IPTG in *Ecoli BL21 (DE3)*. The solubility of the recombinant proteins was identified. According to the different solubility, the proteins were purified by Ni-NTA ararose column of QIAGEN. 3. The immunoreactivity of purified recombinant proteins was evaluated by Western Blot and ELISA. Kunming mice were immunized with recombinant proteins for producing polyclonal antibodies. Preliminary evaluation of diagnostic value of recombinant proteins was performed using polyclonal antibodies.

[Results] 1. 49 positive clones were screened for the first round from the *Clonorchis* sinensis cDNA library, and some of their DNA sequences were compared against GeneBank database. According to the similarities of their sequences, the 28 positive clones were grouped into four categories. 2. Four clones 8A, 19-2C, 22B and 24A were selected for further study and three of them, 19-2C, 22B and 24A were expressed successfully. The estimated molecular weights of recombinant proteins were 13kDa, 40kDa and 41kDa respectively. 22B gene was expressed in soluble form, but 19-2C gene and 24A gene were expressed in insoluble form. After purification with Ni-NTA affinity chromatography, the purified produces were obtained. 3. The results of Western Blot showed that a specific band of 46kDa in the ES antigen could be recognized by the mouse antisera against 22B recombinant protein. The purified recombinant protein of 19-2C was recognized by mouse antisera against ES antigen. The sensitivity for detecting patients infected with C.sinensis by the indirect ELISA method which used mouse antisera against 22B as first antibody was 100%, while the false-positive rate of sera from normal people was 0. We also consutuct another indirect ELISA method which was used recombinant protein of 19-2C as coating antigen. When testing sera from normal persons and patients infected with Schistosoma japonicum or Paragonimus pulmonanis, partial cross-reaction was observed with S. japonicum (5.6%) and P. pulmonanis (8.7%), 8.3% of samples from normal individuals yielded a false-positive result. The indirect ELISA method showed a positive rate of 83.3% to C.sinensis.

[Conclusion] 1. The three positive clones 19-2C, 22B and 24A which were obtained by immunoscreening the cDNA library of *Clonorchis sinensis* with the mouse antisera against ES antigen, were expressed successfully in the *E.coli BL21 (DE3)*. The purified recombinant proteins were obtained. 2. The two new genes of C.sinensis, 19-2C and 22B have not been found in literatures, and the immunoreactivity of the two encoding proteins showed in Western Blot seemed to be new candidate antigens for immunodiagnosis. 3. The indirect ELISA method had comparative higher sensitivity and specificity in detecting Clonorchiasis. This method may have the prospect for application to detect *Clonorchis sinensis* infection among pupolation.

THE PHYLOGENETIC STUDY OF LEISHMANIA IN CHINA BY ISSR MARKERS

WANG Yong (MSc student) TUTOR: WANG Junyun

There is a wide diversity of parasites within Leishmania genus that have distinct epidemiological and biological characteristics and cause a variety of clinical symptoms. In China, there are both human pathogenic Leishmania species and animal pathogenic ones. Sandfly vectors and hosts for Leishmania are diverse and interwoven. The strains belonging to same species with different geographic origins, such as L. infantum may cause different clinical symptoms. Therefore, the phylogenetic study of Leishmania will benefit both molecular epidemiological study of leishmaniasis and species identification, which is crucial for making proper treatment decision and control measures. In this paper, 21 primers were used to amplify 30 Leishmania isolates by ISSR-PCR (inter-simple sequence repeat-polymerase chain reaction). By neutral polyacrylamide gel electrophoresis and silver staining, a total of 866 polymorphic bands were obtained. Jaccard's similarity coefficient and Nei's genetic distance were calculated based on the similarity and dissimilarity among ISSR profiles of strains. Then UPGMA phylogenetic tree and Neighbour Joining phylogenetic tree were reconstructed. According to the clustering result, the isolates studied clustered into 6 groups. Chinese isolates of human pathogenic Leishmania and reference strain of L. donovani (DD8) clustered into a group. Reference strain of L. infantum (LEM), reference strain of L. major (5AS), reference strain of L. tropica (K27) and reference strain of L. aethiopica (L100) clustered into a group. As a single group, reference strain of L. (Viannia) braziliensis (2903) did not cluster with the isolates of Leishmania subgenus. Reference strain of L. turanica (3720) and isolates of L. turanica in Karamay and Qitai, Xinjiang, whose host is Phombomys opimus, clustered together. Reference strain of L. gerbilli (GER) and the isolate (K-7) from Phombomys opimus in Karamay, Xinjiang and the isolate (E154) from Phombomys opimus in Ejina, Inner Monogolia clustered together. The isolate (LIZ) from Teratoscincus przewaiskii in Ejina, Inner Monogolia, the isolate (K-E) from Phlebotomus arpaklensis in Karamay, Xinjiang and the isolate (LUO) from a visceral leishmaniasis patient in Gansu clustered together. Furthermore, ISSR characteristics were analyzed by Principal Component Analysis. There is a consensus between the clustering results and identification results of classical methods, which means that this technique could be used as a quick identification method. The result of this study shows that unidentified isolates namely K-E, Q-4 and E154 are Sauroleishmania, L. turanica and L. gerbili respectively; Isolates of Chinese L. donovani complex is more similar to reference strain of L. donovani (DD8) than other reference strains. This study elucidated the genetic relationship among Chinese Leishmania

isolates, which could provide references for formulating control strategy of visceral leishmaniasis in China, and could also be a simple way to quickly identify *Leishmania* isolates.

THE STUDY OF LAKE REGIONS ENVIRONMENTAL CHANGES' INFLUENCE ON THE INFORMATION OF NEW SNAIL HABITATS

YANG Deping (MSc student) TUTOR: GUO Jiagang

The total area of Oncomelania snail habitats in China is now 38.5 billion square meters, and among which more than 94 percent locate in Lake Region. In Lake Region, some areas are in winter and water in summer, so the water level is hard to control. Most of bottomlands are submersed when it floods .Traditional investigation for snails wastes time, resources and lasts very long. The water line of the Yangtze River has changed a lot, which also changes the snail habitats: some bottomlands where there are no snails in the past became suitable for snails to live; some bottomlands where snails have been cleaned out breed snails again after being submersed by flood. How to supervise snail habitats effectively is very important for schistosomiasis prevention and treatment.

The study chose Wuzhoutou in Nanchang county and Changjiangzhou in Yugan county as the fields. In 2002, snails were found generally in Wuzhoutou bottomland, while snails were found in Changjiangzhou bottomland in 1953. First we used traditional epidemiological methods to analyze the snails and diseases data. The results: The snail density of Wuzhoutou is lower than that of Changjiangzhou, but both infection rates of snails and the infection rates of peasants near Wuzhoutou are higher than Changjiangzhou with P < 0.05 and P < 0.01 respectively. Then we can conclude that when there is a new bottomland with snails, the snails increase widely but with low density. As there has never any control of snails, plus the continually activities of villagers and livestock, the snail infection rate and people infection rate of Wuzhoutou were higher than those of Changjiangzhou. Then we collected four TM images of Poyang lake from 1998 to 2004, performed radiant, atmospheric and geometric correction, and then performed unsupervised classification, K-T change, calculate greenness value and vegetation indicate-NDVI. Compare this indicates of Wuzhoutou longitudinally as well as indicates of Wuzhoutou and Changjiangzhou different years transversely. Then we can conclude that in 1998 Wuzhoutou wasn't a suitable place for snails to live from the vegetation density to NDVI. The flood in 1998 brought not only snails but also abundant nourishment for grass growing more quickly. In 1999, more than 60 percent of Wuzhoutou had been covered by grass with the increase of NDVI (p < 0.01 comparing to 1998); both the NDVI and the greenness value of Wuzhoutou were lower than Changjiangzhou's (p < 0.001). But for the vegetation cover rate, NDVI and greenness value, we can infer that the environmental conditions of Wuzhoutou in 1999 became suitable for snail to live. Then, we can say in 1999 there were snails in Wuzhoutou. From this study we find if one bottomland's vegetation cover rate is over 20 percent, NDVI reach 0~0.2 and greenness reach

0~50, then it may become a new snail habitat with the snails diffusion. By multi-temporal images combining with data from fields, we can supervise snail habitats of the whole Poyang Lake and predict the potential snail habitats. Last, we analyzed 5 images of the Poyang lake of 1998, 1999, 2000, 2004, and 2005, computed the water area of the whole Poyang lake, and in the meantime we collected the area of new snail habitats of these years and analyzed the correlation between water area and new snail habitats.

STUDIES ON CLONING, EXPRESSION OF THE GENE ENCODING TYROSINE KINASE OF SCHISTOSOMA JAPONICUM AND ITS PROTECTIVE EFFICACY

ZANG Wei (MSc student) TUTOR: CAO Jianping

Schistosomiasis is a zoonotic parasitic disease now recognized as a major public health problem in China. The schistosome vaccine, acting as a measure of economical and long-term solution for prevention, has been well developed over past two decades. A lot of candidate antigens derived from schistosome and its egg including enzymes, muscles and teguments have been tested in many animal models, but the protective efficacy in general seems to be limited. Schistosomiasis is highly associated with eggs depositing in tissues, so it becomes a strategy to induce anti-fecundate immunity against the parasite. Studies done on *S. mansoni* have demonstrated that many gender-associated proteins play a significant role in regulating the development of the worm fecundity. Therefore, the researches on this issue will not only facilitate to develop an effective anti-fecundate vaccine, but also be helpful to elucidate the mechanisms of the function molecules in growth and development of the worm.

The study was made on one of gender-associated signal molecules, tyrosine kinase 4 of *S. japonicum* (SjcTK4).Firstly, and the conservative region of the gene encoding TK4 was cloned and expressed using molecular cloning technique. A 582 bp in size of the DNA fragment was acquired, and the sequence analysis indicated that this fragment shows 91% in homology to that of SmTK4, and the deduced amino acid sequence shows to be 98% identical with that encoded by SmTK4 with predicted relative molecule weight of 22 kDa. The bio-information analysis demonstrated that the protein had multiple sites of enzymatic activities. Secondly, the gene of TK4 exists as a sexual difference gene in *S. japonicum* was identified by using real-time PCR. The mRNA level of TK4 in male worms was 18 times higher than that in female worms. Thirdly, the immunological studies in C57BL/6 mice were performed to evaluate protective efficacy of the molecule. As a result, worm reduction rate, egg reduction rate and egg reduction rate per worm pair in mice immunized with reSjcTK4 plus Montanide ISA 206 were 27.3%, 32.0% and 30.5% respectively, while DNA vaccine group showed 20.3%, 26.0% and 27.5%

immunity could be found experimentally in mice immunized with recombinant antigen and DNA vaccine against challenge infection of *S. japonicum*.

The results indicated that the conservative region of gene encoding tyrosine kinase 4 of *S. japonicum* was successfully cloned and expressed, and may facilitate to further studies using the full length gene as well as its expression products. The outcome of experiments in immunization/challenging mice model also suggested that this novel candidate antigen against schistosomiasis could be helpful to the development of polyvalent vaccines in future.

ESTABLISHMENT AND APPLICATION OF DETECTION APPROACH FOR CIRCULATING ANTIGEN OF *PARAGONIMUS WESTERMANI* INFECTION

CHEN Shao-hong (MPH student) TUTOR: ZHOU Xiao-nong

[Objective] 1.To prepare a specific polyclonal antibody against *Paragonimus westermani* (Pw-IgG), and to detect early human infection with *P. westermani*, using the dot-ELISA established and to explore application value of its diagnosing paragonimiasis in the epidemic areas. 2. To provide a scientific basis on the diagnosis and evaluation of curative effect of praziquantel for paragonimiasis by observation on dynamics of specific antibody and circulating antigen (CAg) in sera of the dogs infected with *P.westermani* experimentally.

[Methods] 1. Dogs were experimentally infected with the metacercariae of *P.westermani* isolated from freshwater crabs. Sera were collected from the infected dogs from 4 to 133 days after the infection for circulating antigen detection, and dynamics of the CAg in the sera of dogs were observed by dot-ELISA before and two months after praziquantel treatment. Dynamics of the specific antibody in sera of the dogs infected with *P. westermani* were observed with ELISA in different time periods from 2 weeks to 19 weeks after the infection. 2. The circulating antigens were detected by dot-ELISA established in sera of patients with paragonimiasis confirmed in clinic, people in paragonimiasis endemic areas, the dogs infected with *P. westermani* early and patients with other parasitosis. The sera specific antibodies were also detected with dot-ELISA among *P. westermani*-infected persons and people in the endemic areas. An evaluation was made on circulating antigen detection with Pw-IgG dot-ELISA.

[Conclusion] 1. *P. westermani* circulating antigen detection method with the dot- ELISA established can be used for the diagnosis of paragonimiasis in early stage of infection and for the evaluation of curative effect based on successfully prepared polyclonal antibody against the adult worms of P. westermani.2. The circulating antigen can be detected in sera of dogs 10-56 days after the infection, and so it has an earlier diagnostic value. The circulating antigen occurred temporarily after treatment with praziquantel in infected dogs, and disappeared gradually in one week. Specific antibody of dogs appeared 4 weeks after *P.westermani* infection,

and the highest levels of the antibody maintained 4-12 weeks after the infection, and kept at a higher level thereafter.

§6.获奖项目介绍

嗜人按蚊地区疟疾流行潜势及控制暴发流行的研究

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疟疾是严重危害我国人民身体健康的重大寄生虫病。嗜人按蚊是我国疟疾的主要 传播媒介之一,20世纪90年代嗜人按蚊分布区疟疾发病数占全国的40%,疫情极不稳 定,不断出现局部和较大范围的暴发。针对嗜人按蚊为媒介地区疟疾防治中的关键技 术难题,以合作攻关和实验室与现场相结合的形式,用流行病学、分子生物学、遗传 学、形态学、社会经济学等方法开展了此项研究。

主要成果:(1)确定了我国嗜人按蚊分布于18省、市、区的245个县,北缘为北 纬42°10',突破了以往分布于北纬33°以南的认识,掌握了分布特征,首次绘制了 该蚊的分布地图,对及时调整我国疟疾防治策略有重大的理论和实际指导意义;(2) 系统阐明了我国不同嗜人按蚊地区疟疾流行规律、特点,将我国有嗜人按蚊分布的疟 区划为三类,制定了针对性疟疾防治策略和技术方案;(3)首次阐明了不同嗜人按蚊 分布区疟疾的流行潜势,并应用基本繁殖率的理论,确立了嗜人按蚊传播疟疾的临界 叮人率,并经现场验证嗜人按蚊临界叮人率,是疟疾监测中1个重要和灵敏的指标, 可用于疟疾流行的监测和预警,具有重要的科学价值和实用性;(4)优选出经济有效 的控制嗜人按蚊分布区疟疾暴发流行的对策与措施,在10省1.2亿人口地区推广应用, 控制了暴发流行,2006年嗜人按蚊分布区疟疾发病率已稳定在1/万以下,有显著经济、 社会效益;(5)建立了赫坎按蚊近缘种基因鉴别技术,解决了嗜人按蚊与其近缘种不 易鉴定的难题,已在8省、区应用,且被WH0用于朝鲜疟疾媒介调查;(6)建立了旌德 罗索线虫中试生产线,研制了苏云金杆菌缓释剂,拓展了生物灭蚊的应用。

创新点:(1)首次发现辽宁省有嗜人按蚊分布,且对间日疟原虫敏感;(2)建立了嗜 人按蚊传播疟疾的临界叮人率,为疟疾流行的监测、预警提供了1个重要和灵敏的指标; (3)首次根据嗜人按蚊生态特征和疟疾流行潜势,划分我国有该蚊分布的疟区,制定相应防治策略与方案。

撰写论文 112 篇、专著 1 部,已在国内外有影响杂志发表 59 篇。主要成果已被卫生 部在《2006-2015 年全国疟疾防治规划》、《疟疾防治技术方案》、《疟疾突发疫情应急处理 预案》、《全国疟疾监测方案》和《疟疾防治手册》中采用,课题中、终期验收两次获"优"。 本成果体现了我国疟疾防治研究的先进水平,丰富了抗疟理论和实践。

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生态环境变化对血吸虫病流行态势的影响及干预措施研究

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本项研究所属学科为预防医学与卫生学。

三峡库区和长江中下游地区生态环境改变对血吸虫病传播有重大影响。本研究采用流行病学、生态学、社会医学的观点和方法,对三峡库区、洪涝灾害及退田还湖、平垸行洪、移民建镇地区生态环境的变化与血吸虫病传播的关系进行了系统的研究与分析,并模拟改变后的环境进行了实验研究,找出影响血吸虫病传播的关键因素,针对不同类型地区提出干预措施。利用地理信息系统和遥感技术(GIS/RS),结合面上螺病情资料建立了湖区 GIS 模型,预测血吸虫病流行的趋势。 主要成果为:1.阐明了三峡库区生态环境变化的规律特点及其与血吸虫病传播的关系,现场和实验研究证明三峡库区为血吸虫病的潜在流行区;2. 阐明了洪涝灾害对钉螺扩散和 血吸虫病传播的影响;3. 建立了湖区血吸虫病 GIS 模型,已用于钉螺分布和血吸虫病传播 的预测;4. 提出了防止三峡库区血吸虫病传播的监测技术方案;5. 提出了洪涝灾害期间 预防控制血吸虫病预案;6.阐明了各类平垸行洪、移民建镇地区疫情发展趋势、特点,提 出了相应的防治对策;7.研制了简便有效的血清学诊断方法--斑点金免疫渗透法(DIGFA),并应用于血清流行病学评价。

创新点:1. 系统阐明了三峡建坝后生态环境改变对血吸虫病传播的影响,研究证明三 峡库区为血吸虫病的潜在流行区,提出了防止三峡库区血吸虫病传播的监测技术方案;2. 阐明了"退田还湖、平垸行洪、移民建镇"对血吸虫病传播的影响,提出了以社会措施为 主导的血吸虫病防治策略思路,现场实验取得了一举多得的效果;3. 系统阐明了洪涝灾害 对钉螺分布、扩散及人群感染的影响及规律,提出了洪涝灾害期间预防控制血吸虫病预案; 4.建立了湖区血吸虫病 GIS 预测系统。

推广应用情况: 1.卫生部根据本研究结果,已将三峡库区列为血吸虫病潜在流行区, 并设立了监测点;重庆市根据本研究结果,制订了重庆市血吸虫病监测技术方案。2. 根据 本研究结果,已制订洪涝灾害期间预防控制血吸虫病预案,并在安徽等省实施。3.研制的 斑点金免疫渗透法已列入国家血吸虫病诊断标准。4. 湖区血吸虫病 GIS 模型已在部分疫区 应用于螺情监测。5.针对长江中下游生态环境变化提出的防治策略思路已成为各地制订防 治措施的依据。

本项研究成果对长江中下游地区血吸虫病防治具有深远的指导意义,有非常显著的经济社会效益。

本项研究发表论文 102 篇,其中 SCI 期刊源收录论文 10 篇,国内核心期刊收录论文 89 篇,引用引证 320 次。

项目研究起止年月: 2001 年 11 月至 2006 年 12 月 **项目研究经费来源:** "十五"国家科技攻关项目

§ 6. AWARDED PROJECTS

STUDY ON EPIDEMIC POTENTIAL AND CONTROL STRATEGY FOR MALARIA OUTBREAKS IN ANOPHELES ANTHROPOPUGUS AREAS

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Malaria is a major parasitic disease seriously threatening the health of Chinese people. *Anopheles anthropophagus (An. Anthropophagus)* is one of major vectors of malaria in China. The malaria cases in the areas where *An. Anthropophagus* is distributed were accounted for 40% of the total malaria cases nation-wide in 90s of 20 century. The epidemic situation was unstable, the outbreaks of malaria occurred in local or larger areas occasionally. Aiming at the key technique problems of malaria control and prevention in the targeted area, this project has been performed with epidemiological, molecular biological, genetic, morphological and socio-economic methods in combination of laboratory and field researches.

Major outcomes

1. It is identified that *An. anthropophagus* is distributed in the area covering 245 counties of 18 provinces and municipalities in China with the north margin at north latitude of $42^{0}10$ which breaks through the previous conception of north latitude of 33^{0} as north margin. The identification on the characteristics of distribution leads to the completion of drawing a distribution map of *An. anthropophagus* in China that makes great contribution to the adjustment of the strategy of malaria control and prevention in China.

2. The malaria epidemic characteristics in various areas in China have been elucidated. Three categories of malaria epidemic areas have been thus defined and corresponding strategy and technical protocol for malaria control and prevention been determined.
3. The malaria epidemic potential at different *An. anthropophagus* distribution areas has been elucidated for the first time. The critical man-biting rate (CMBR) for *An. anthropophagus* to transmit malaria has been identified based on the theory of basic reproduction rate. In the field trial, CMBR was verified as an important and sensitive parameter that is useful for monitoring and alarming of malaria epidemic with scientific and practical significance.

4. The strategy and measures for economically and efficiently controlling malaria outbreaks in *An. anthropophagus* distribution areas have been determined and widely implemented in 10 provinces with population of 0.12 billion thus to bring the malaria endemic under control. The malaria morbidity in *An. anthropophagus* distribution areas has been stabilized under 1/10,000, gaining significant socio-economical benefits.

5. The establishment of genetic technique for identification of sibling species within *An*. *Hyrcanus* group has solved the problem of distinguishing *An*. *anthropophagus* from *An*. *hyrcanus* group. The technique has been applied in 8 provinces and adopted for malaria vector investigation in DPR Korea by WHO.

6. The intermediate trial production line of *Romanomermis Jingdeensis* has been established while a slow-release formulation of *Bacillus thuringiensis var. israelensis (Bti)* has been developed so as to widen the application of bio-control of mosquito.

Innovations

1. It is the first time to identify the distribution of *An. anthropophagus* which is sensitive to *Plasmodium vivax* in Liaoning Province.

2. The critical man-biting rate (CMBR) for *An. anthropophagus* to transmit malaria has been identified thus an important and sensitive parameter for monitoring and alarming of malaria epidemic been supplied.

3. It is the first time to identify the various malaria areas where *An. anthropophagus* is distributed and to determine the strategy and measures for control and prevention of malaria at corresponding areas based on the ecological characteristics of *An. anthropophagus* and the epidemic potential of malaria.

112 papers and 1 book were written among which 59 papers were published on the effective journals home and abroad. The major results of the project have been adopted in "National program of malaria control and prevention in 2006-2015", "Technical protocol for control and prevention of malaria", "Pre-protocol of emergency management on outbreaks of malaria", "National protocol for monitoring malaria" and "Handbook of malaria control and prevention". The project was graded as "A" in mid- and term- evaluation. The outcomes of the project have revealed the advanced level of researches on malaria control and prevention in China and enriched the anti-malarial theory and practice.

The period of the project: Oct. 2001- Dec. 2006

Source of the financial support: Ministry of Science and Technology

IMPACT OF ECO-ENVIRONMENTAL CHANGES ON TRANSMISSION OF SCHISTOSOMIASIS AND RELEVANT INTERVENTIONS

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 XIAO Bang-zhong⁹ WU Xiao-hua¹ CHEN Hong-gen⁶ WEN Li-yong⁸ HUANG Yi-xin⁷
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3 Institute of Schistosomiasis Control, Hubei CDC

4 Institute of Schistosomiasis Control, Sichuan CDC

5 Hunan Institute of Schistosomiasis Control

6 Jiangxi Institute of Schistosomiasis Control

7 Jiangsu Institute of Schistosomiasis Control

8 Zhejiang Institute of Parasitic Disease

9 Chongqing CDC

10Fourth Military Medical University

11Institute of Infectious Disease, Zhejiang University

This study belongs to the field of preventive medicine and public health.

The bio-environmental changes of the Three Gorges Reservoir (TGR) areas and the middle and lower reaches of the Yangtze River have great impact to the transmission of schistosomiasis. The study focused on the systematic analysis on the relationship between eco-environmental changes and transmission of schistosomiasis due to the subsequent implementation of the construction of TGR, disastrous floods, and an anti-flood policy of "returning farmland into lake, breaking the levees for storage of flood water, and resettlement of inhabitants from schistosomiasis endemic areas to newly established towns', by using multi-disciplinary approaches of epidemiology, ecology, socio-medical survey combining with the technique of geographic information system and remote sensing. Simulating the conditions of ecological environment changes in TGR, ecological experiments on the snail were done to explore the key factors influencing the transmission of schistosomiasis. This study also established the GIS model in the lake areas in combination with the data of snail survey and the prevalence of schistosomiasis in humans and animals to predict the transmission trend of schistosomiasis in China. Relevant intervention approaches were also presented in consideration of different types of environment. Major achievements are shown in the following seven aspects. 1. The study clarifies the rules and characteristics of the eco-environment changes in TGR areas and its impact on transmission of schistosomiasis. All the results from field survey and experiments prove that TGR areas are a potential schistosomiasis endemic area. 2. The impact of disastrous floods on the dispersal of *Oncomelania* snails and the prevalence of schistosomiasis is enucleated in the study. 3. The GIS model in the lake areas has been established and has been used to predict the snail distribution and the transmission trend of schistosomiasis. 4. Surveillance scheme for preventing schistosomiasis from being introduced into TGR areas is presented. 5. Counterplan has been developed to prevent and control the prevalence of schistosomiasis in the period of floods. 6. The trends and characteristics of endemicity development for schistosomiasis and the assessment of control measure are elucidated for different areas with re-establishment of buffer lakes and resettlement of farmers. 7. One simple and effective serodiagnostic kit, dot immunogold filtration assay (DIGFA), has been developed that can be used for the assessment of prevalence of schistosomiasis.

The innovative points of the study are: 1. The impact of eco-environmental changes in TGR areas on the transmission of schistosomiasis is elucidated systematically, and the surveillance scheme for preventing schistosomiasis from introducing into TGR areas is presented. 2. The impact of re-establishment of buffer lakes and resettlement of farmers on schistosomiasis transmission is enucleated and a new control strategy idea is presented: using social approach as a leading component that has reached positive effects in the field experiments. 3. The impact of disastrous floods on the distribution, dispersal of snails and schistosome infection in human population has been enucleated systematically and a counterplan to prevent and control of the prevalence of schistosomiasis has been developed. 4. A GIS predicting system for schistosomiasis in the lake region has been established.

Popularization and application: 1. TGR has been considered as a potential schistosomiasis endemic area by the Ministry of Health as a result of this study, and schistosomiasis surveillance scheme has been carried out in Chongqing Municipality raised from the results of this study. 2. Counterplan for prevention and control of schistosomiasis in the period of floods raised from this study has been carried out in several endemic areas of Anhui and other provinces. 3. The serodiagnostic technique, DIGFA, has been placed as one of the techniques in national diagnostic criteria for schistosomiasis. 4. The GIS model for schistosomiasis in the lake regions has been used for snail surveillance in a part of endemic areas. 5. The thought of the control strategy for schistosomiasis raised from bioenvironmental changes in the middle and lower reaches of the Yangtze River has been used as the basis for the formulation of control approaches in the endemic areas.

The study has deep guiding significance for schistosomiasis control in the areas of middle and lower reaches of the Yangtze River and remarkable socio-economic benefit.

A total of 102 scientific papers have been published, and among them, 10 were published

in the international journals cited by SCI, and 89 were published in the key Chinese biomedical journals, and have been cited by other scientistific publications for 320 times.

The period of the project: Nov. 2001- Dec. 2006

Source of the financial support: Ministry of Science and Technology

§7. 出版著作和发表论文题录

出版著作

潘卫庆主编. 曹建平. 血吸虫病. 寄生虫生物学研究与应用, 第 1 版, 北京. 化学工业 出版社, 2007.

血吸虫病

- 王显红,周晓农,李远林¹,吕山,李兰花,贾铁武,陈绍荣¹,杨忠¹,方文¹,陈凤¹:用贝叶斯方 法对日本血吸虫感染两种检测方法进行评价*.中国卫生统计,2007,24(4):361-363. *国家自然科学基金重大项目(编号 30590373);联合国儿童基金会/联合国开发署/世界银行/世界卫生组织热带病研究与培训特别规划署 资助项目(TDRA30298) 1 云南省大理州血吸虫病防治研究所
- 杨坤,王显红,吴晓华,杨国静¹,贾铁武,周晓农:空间流行病学技术在血吸虫病防治研究 中应用*.中国公共卫生,2007,23(8):1017-1019. *国家自然科学基金重大项目(30590373);江苏省预防医学会课题(Y2004-33) 1 江苏省血吸虫病防治研究所
- 邓瑶,周晓农:我国血吸虫病流行的社会因素.中国血吸虫病防治杂志,2007,19(5):393-397.
- 党辉,王强,周晓农,郭家钢,吴晓华:两次全国血吸虫病流行病学抽样调查未控制流行区 调查样本的构成分析.中国病原生物学杂志,2007,2(2):133-136.
- 朱蓉,党辉,郭家钢:2006 年全国血吸虫病监测结果分析.中国血吸虫病防治杂志,2007,19(4):257-262.
- 吴晓华,徐兴建¹,肖邦忠²,王汝波,戴裕海¹,许静,吴成果²,魏凤华¹,周晓农,郑江:三峡建 坝后血吸虫病传播危险因素研究 II 库区社会经济因素变化对血吸虫病传播的影响*. 中国血吸虫病防治杂志,2007,19(3):183-187.

▶ 杨忠¹,徐斌,王玮¹,冯正,魏东芝¹,胡薇:日本血吸虫腺苷脱氨酶基因的克隆和融合表达*. 中国寄生虫学与寄生虫病杂志,2007,25(1):6-11.

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- 余晴,鲍子平,曹淳力,祝红庆,郭家钢:全球地理定位无线监控调度系统在血吸虫病现场 调查中的应用.中华预防医学杂志,2007,41(5):361-364.
- 周晓农,姜庆五¹,吴晓华,赵根明¹,林丹丹²,张世清³,汪天平³,郭家钢,许静,汪世平⁴,尹治成⁵,王秀芬⁶,王立英⁷:我国控制和消灭血吸虫病标准的作用与演变.中国血吸虫病防治杂志.2007.19(1):1-4.

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 - *上海市科学技术协会政策研究项目资助(No. 20040506)
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 3 上海市闵行区疾病预防控制中心
- 杨忠¹,胡薇,苏谨²,马骊²,李亦学³,冯正,魏东芝¹:日本血吸虫腺嘌呤磷酸核糖转移酶的 生物信息学鉴定与分析*.南方医科大学学报,2007,27(3):272-275.

* 国家自然科学基金(30570429)

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- 2 南方医科大学分子免疫学研究所
 3 上海生物信息技术研究中心
- 陈韶红,李浩,陈家旭,常正山,周晓农:对并殖吸虫病患者外周血中嗜酸性粒细胞相关性的初步观察*.中国兽医寄生虫病.2007.15(1):17-19.

* 国家自然科技资源平台项目(2005DKA21104)

- 黄成玉¹,卢艳,王玮¹,鞠川,冯正,杨忠¹,王升跃²,胡薇:日本血吸虫弹性蛋白酶基因的克隆、表达及虫期特异性转录*.中国寄生虫学与寄生虫病杂志,2007,25(5):359-363.
 *国家 973 重点基础研究发展计划(No. 2003CB716804);国家 863 高技术研究发展计划(No. 2004AA2Z1010, 04DZ14010);国家自然科学基金(No. 30400562);上海市青年科技启明星计划(No. 040MX1455);美国国立卫生研究院 TMRC (No. 5P50A1039461-10)
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- ▶ 罗兴建¹,吴成果¹,周晓农,肖邦忠¹,陈伟¹:三峡库区当地人群日本血吸虫 IgG 抗体特征 研究.热带医学杂志,2007,7(9):909-913.

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▶ 陈朝,周晓农,杨坤,王显红,姚振齐¹,汪天平²,杨国静³,杨英静¹,张世清²,汪建,贾铁武,吴晓华:基于空间分析的不同环境日本血吸虫病控制策略的研究:一个病例对照研究.Geospatial Health,2007,1(2):223-231.[英]

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 *国家自然科学基金(30371262);国家高技术研究发展计划(863 计划)(2006AA02Z444);上海市科委科技攻关重大计划(03DZ19231);生物医药重点科技攻关项目(064319026)
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    四川省寄生虫病防治所
    四川省寄生虫病防治所
    5 云南省地方病防治所
    10 卫生部
```

- 郭俭,严自助,吴缨,余晴,鲍子平,包意芳,杨玥涛,钱翠珍,许静,胡绍良¹,郭家钢:抗体差异 度法推测血吸虫病患者感染时间的探讨.国际医学寄生虫病杂志,2007,34(1):16-20. 1深圳市康百得生物科技有限公司
- 童群波,刘述先,李小红,徐馀信,沈玉娟,曹建平:日本血吸虫嗜肌素样蛋白编码基因的克 隆表达及其免疫原性研究*.中国血吸虫防治杂志,2007,19(4):247-251 *国家自然科学基金(30371262);国家高技术研究发展计划(863 计划)(2006AA02Z444、2004AA215240、2004AA2Z3520);上海市科委科技 皮关重大计划(03DZ19231);生物医药重点科技攻关项目(064319026)
- 王文琴¹,李小红,刘述先,宋光承,徐裕信,曹建平:日本血吸虫 3-磷酸甘油醛脱氢酶的克 隆 表达及结构预测*.中国血吸虫病防治杂志,2007,19(3):170-174 *国家自然科学基金(30371262);国家高技术研究发展计划(863 计划)(2006AA02Z444、2004AA215240、2004AA2Z3520);上海市科委科技攻 关重大计划(03DZ19231);生物医药重点科技攻关项目(064319026) 1 湖州师范学院医学院

▶ 许静,陈年高¹,冯婷,王恩木²,吴晓华,陈红根¹,汪天平²,周晓农,郑江:日本血吸虫病常用 诊断方法现场查病效果的评估*.中国寄生虫学与寄生虫病杂志,2007,25(3):175-179 * 国家 "+五" 攻关项目 (No. 2004BA718B12) 1 江西省寄生虫病防治研究所 2 安徽省血吸虫病防治研究所

- ▶ 姜旭淦¹,傅行礼¹,陈盛霞¹,徐会娟¹,帅连云¹,曹建平,仇锦波:日本血吸虫成虫和虫卵可 溶性抗原及其组分抗原的研究*.江苏大学学报(医学版),2007,17(1):19-22,56.
 *江苏省高校自然科学基金资助项目(01KJB310012)
 1 江苏大学医学技术学院
- 余晴,赵根明¹,曹淳力,黄少玉²,张鸿满³,张剑锋⁴,郭家钢:血吸虫病传播阻断地区监测人 群筛查的费用与效果.中国血吸虫病防治杂志,2007,19(1):46-49.

1复旦大学公共卫生学院

2 广东省寄生虫病防治研究所

了西壮族自治区疾病预防控制中心
 浙江省医学科学院寄生虫病防治研究所

- ▶ 贾铁武,周晓农,王显红,Utzinger J¹,Steinmann P¹,吴晓华:慢性日本血吸虫病年龄别伤残 权重评价. Bull World Health Organ,2007,18(6):458-465. [英] 1 瑞士热带病所
- ▶ 陈家旭,刘述先,曹建平,宋光承,徐馀信:日本血吸虫 Sjc97 DNA 疫苗免疫小鼠攻击感染后的组织细胞反应*.中国血吸虫病防治杂志,2007,19(1):17-20
 *国家高技术研究发展计划(863 计划)(2001AA215151)
- ▶ 肖树华, Keiser J¹, Chollet J¹, Utzinger J¹, DONG Y, Endriss Y¹, Vennerstrom JL¹, Tanner M¹: trioxolanes 在体内和体外抗感染人体的主要血吸虫的实验研究. Antimicrob Agents Chemother, 2007, 51(4):1440-1445[英] 1瑞士热带病所

XIAO S, ZHAN B1, XUE J, Goud GN1, Loukas A1, LIU Y, Williamson A1, LIU S, Deumic V1, Hotez P1. 用人的美洲钩虫感染的仓鼠(Mesocricetus auratus)评价作疫苗用的重组 钩虫抗原。

疟疾

- 盛慧锋,汤林华:疟疾暴发流行的监测和预测.国际医学寄生虫病杂志,2007,34(3):163-168.
- 王多全,汤林华,周水森,顾政诚:用捕获-再捕获方法对中国不同地区监测点疟疾流行现 状的评估.中华流行病学杂志,2007,28(11):1105-1107.

[▶] 夏志贵,张华勋¹,陈开军²,苏国安²,陈发锋³,黄光全¹,汤林华:湖北疟疾高传播地区疟防 142

知识、态度和行为研究.China Trop Med,2007,7(4):492-496. [英]

1 湖北省疾病预防控制中心传染病防治研究所

- 2 枣阳市疾病预防控制中心
- 3 枣阳市璩湾镇卫生院
- 盛慧锋,郑香,施文琦,徐建军¹,蒋伟康,王多全,汤林华:贵州省从江县疟疾局部暴发的影响因素分析.中国寄生虫学与寄生虫病杂志,2007,25(3):225-229.

1 贵州省疾病预防控制中心

- 张国庆,汤林华:基因芯片技术在疟疾研究中的应用.国际医学寄生虫病杂志,2007, 34(4):180-183
- 郑彬,刘燕,武松,王学忠 1:PCR 检测恶性疟原虫感染蚊方法的建立.国际医学寄生虫病杂志,2007,34(3):119-121 1云南省寄生虫病预防所
- 周水森,黄芳,汤林华,郑香,沈毓祖¹,苏云普²,黄光全³:运用 Kriging 法对我国黄淮流域疟疾空间分布特征的研究*.中国病原生物学杂志,2007,2(3):204-206 *科研院所社会公益研究专项资助项目(No. 2005DIB1J092) 1安徽省疾病预防控制中心 2河南省疾病预防控制中心 3湖北省疾病预防控制中心
- 张国庆, 汤林华, 官亚宜, 周水森, 郑彬, 黄芳, 武松, 刘燕: 多重 PCR 技术检测恶性疟原 虫抗药性相关分子标志的方法研究*. 中国寄生虫学与寄生虫病杂 志,2007,25(6):451-456.

*国家"十五"科技攻关项目(No. 2004BA718B13)

- 汪俊云,石峰,杨玥涛,高春花,包意芳,汤林华:快速诊断疟疾胶体金免疫层析试条方法的 建立与评价.中国寄生虫学与寄生虫病杂志,2007,25(5):415-418 *科技部研究院所技术开发研究专项基金(No. 2003-EG150182)
- ▶ 周水森,黄芳,沈毓祖 ¹:ARIMA 模型在疟疾发病预测中的应用*.中国病原生物学杂志,2007,2(4):284-286

*科研院所社会公益研究专项资助项目(No2005DIB1J092)

- 1 安徽省疾病预防控制中心
- 周水森,王漪,汤林华:2006年全国疟疾形势.中国寄生虫学与寄生虫病杂志,2007,25(6):439-441.

利什曼病

- 金长发,洪玉梅,熊光华:中国犬源性和野生动物源性内脏利什曼病的研究进展.国际医学寄生虫病杂志,2007,34(5):227-230.
- 高春花,管立人,汪俊云:利什曼原虫的传播机制及传媒蛉种的研究进展.国际医学寄生 虫病杂志,2007,34(3):113-118.
- 汪俊云,冯宇¹,高春花,金长发,陈生邦¹,张丑吉¹,何金萍 1,杨成明¹,杨玥涛,包意芳:甘肃 省文县流行区人群婴儿利什曼原虫无症状感染现状*.中国寄生虫学与寄生虫病杂 志,2007,25(1):62-64. *世界卫生组织TSA 基金 (No. 1079946)

1 甘肃省疾病预防控制中心

螺类

- 吴晓华,周晓农:商陆科植物的灭螺效果及其应用.中国血吸虫病防治杂志,2007,19(1):78-80.
- 朱丹,李红军¹,刘和香,张仪,郭俭,梁幼生¹,周晓农:密达利对湖北钉螺酶组织化学作用的观察.中国寄生虫学与寄生虫病杂志,2007,25(3):198-202.
 1 江苏省血吸虫病防治研究所
- 刘和香,张仪,吕山,朱丹,王显红,胡铃,周晓农:三种方法检测福寿螺肺囊内广州管圆线虫效果的比较研究*.中国寄生虫学与寄生虫病杂志,2007,25(1):53-56.
 *国家 *+五" 科技攻关项目 (No. 2003BA712A09-01)
- 祝红庆,钟波¹,曹淳力,鲍子平,万学祥²,王志祥²,陈琳¹,郭家钢:"荣宝"在山丘型血吸虫病 流行区的灭螺效果.中国血吸虫病防治杂志,2007,19(3):212-216. 1 四川省疾病预防控制中心寄生虫病预防控制所 2 四川省周山市东坡区血吸虫病防治站
- 朱丹,李红军¹,和香,张仪,郭俭,梁幼生¹,周晓农:密达利对湖北钉螺酶组织化学作用的观察.中国寄生虫学与寄生虫病杂志,2007,25(3):198-203. 1江苏省血吸虫病防治研究所
- 杨德平,吴昀昭¹,朱蓉,张利娟,郭家钢:多时相相对辐射校正的 TM 图像对钉螺孳生地环境变化的研究*.中华预防医学杂志,2007,41(5):357-360. "+五"国家科技攻关项目(2004BA718B06) 1 中国科学院遥感应用研究所遥感科学国家重点实验室
- 郭家钢:遥感技术将开创研究钉螺生态环境的宏观和微观世界新领域.中华预防医学杂 144

志,2007,41(5):342-343.

- 张仪,朱丹,李洪军¹,刘和香,梁幼生¹,许学年,李文新²:新型植物灭螺剂HL 对钉螺作用机 制研究*.中国人兽共患病学报,2007,23(10):978-981 *国家 "863" 血吸虫病防治研究专项资助项目 (2004AA2Z3550) 1 运苏省血吸虫病防治研究所
 - 2 华中师范大学生命科学院
- 刘和香,张仪,吕山,朱丹,王显红,吴缨,胡铃,吴世芳,周晓农:水温对广州管圆线虫感染福 寿螺影响的研究*.中国人兽共患病学报,2007,23(9):923-926.

*国家"十五"科技攻关项目(No2003BA712A09-01)

其他

- 王显红,周晓农:贝叶斯统计在率估计与分析中的应用*.中国卫生统计,2007,24(1):86-89. *国家自然科学基金重大项目(编号 30590373),联合国儿童基金会/联合国开发署/世界银行/世界卫生组织热带病研究与培训特别规划署资助项目(TDRA30298)
- 李兰花,周晓农:人芽囊原虫的致病性与遗传多样性研究进展.国际医学寄生虫病杂志,2007,34(1):28-33.
- 杨坤¹,杭德荣¹,颜维安¹,杨国静¹,吴荷珍¹,周晓农:应用地理信息系统进行垃圾填埋场 选址的初步研究*.环境监测管理与技术,2007,19(1):12-14.
 *江苏省自然科学基金资助项目 (BK2001158)
 1 江苏省血域虫病防治研究所
- 洪玉梅,陈勤,姬晓云,刘悦:国际医学寄生虫病杂志读者调查报告.国际医学寄生虫病杂志,2007,34(6):335-336.
- ▶ 苏忠伟:寄生虫病所人才队伍发展的思考.中国卫生人才,2007,8:56-57.
- 王琴美,兰勤娴,吴嘉彤,郑赛晶¹,金永明¹,相丽珍,钱颖骏:部分国产烤烟型卷烟烟气冷凝物的中性红细胞毒性试验*.烟草科技,2007,5:41-43.
 - *上海烟草(集团)公司资助项目"建立烟气生物毒理试验系统"(No.04110)
 - 1 上海烟草(集团)公司技术中心
- ▶ 陈绍荣¹,杨忠¹,李远林¹,Steinmann PJ²,李宏军³,陈凤¹,李兰花,马俊华¹,贾铁武,王尚位¹,许静,方文¹,杨慧¹,段玉春¹,刘榆华¹,周晓农:云南省洱源县人体重要寄生虫病调查*. 中国血吸虫病杂志,2007,19(1):64-67.
 - * 国家自然科学基金重大项目(30590370)
 - 1 云南省大理州血吸虫病防治研究所

² 瑞士热带病研究所

³ 云南省大理州洱源县血吸虫病防治站

▶ 顾灯安,金长发,兰勤娴,张丑吉¹,李凡¹,张仪:灯诱法监测白蛉的初步试验.中国寄生虫学 与寄生虫病杂志,2007,25(2):160,封三.

1 甘肃省疾病预防控制中心

- ➤ Steinmann P¹,周晓农,杜尊伟²,姜进勇²,王力波²,王学忠²,李兰花,Marti H¹,Utzinger J¹:云 南省发现粪类圆线虫及诊断方法的比较*. 公共科学图书馆 Ros Negl Trop Dis, 2007,1(1):e75-e80.[英] *瑞士国家科学基金 (No. PP00B-102883);国家自然科技资源平台项目 (2005DKA21104)
 - 1 瑞士热带病所
 2 云南省寄生虫病防治所
- 李兰花,周晓农,杜尊伟¹,王学忠¹,王力波¹,姜进勇¹,Yoshikawa H²,Steinmann P³,Utzinger J³, 吴志良⁴,陈家旭,陈绍红,张玲:云南人芽囊原虫分子流行病学.Parasitol Int,2007,56(4):281-286. [英]
 - 1 云南省寄生虫病防治所
 2 日本奈良女子大学生命科学系
 3 瑞士热带病所
 - 4 日本岐阜大学医学研究生院寄生虫系
- ▶ 李兰花¹,张小萍²,吕山,张玲,Yoshikawa H³,吴志良⁴,Steinmann P⁵,Utzinger J⁵,童小妹,陈 绍红,周晓农:中国四个人芽囊原虫流行地的现况调查与地理离株的分型, Parasitol

Int,2007,102(1): 83-90. [英] 1 潍坊医学院预防医学系 2 上海疾病预防控制中心 3 日本奈良女子大学生命科学系 4 日本岐阜大学医学研究生院寄生虫系 5 瑞士热带病所

- ▶ 肖树华,吴中兴¹,张剑辉²,王善清³,王世海⁴,邱东川⁵,王翀²:三苯双脒肠溶片治疗 899 例儿童肠道线虫感染的临床观察.中国寄生虫学与寄生虫病杂志,2007,25(5):372-375.
 - 1 江苏省寄生虫病防治研究所
 2 山东新华制药股份有限公司
 3 海南省疾病预防控制中心
 4 贵州省疾病预防控制中心
 5 四川省疾病预防控制中心
- 盛慧锋,富秀兰,伯韦,胡亚青,戴菁:《中国寄生虫学与寄生虫病杂志》5年引文分析.预防 医学情报杂志,2007,23(1):61-64.
- 肖树华:吡喹酮抗血吸虫作用的研究进展.中国寄生虫学与寄生虫病杂志,2007,25(6):492-502.
- > 郭俭,常正山,张永年:裂头蚴侵入人体椎管 1 例报告.中国寄生虫学与寄生虫病杂志,2007,25(5):封三.

➤ Steinmann P¹,周晓农,李远林²,李红军³,陈绍荣²,杨忠²,方文²,贾铁武,李兰花,Vounatsou P¹,Utzinger J¹:云南洱源县居民蠕虫感染调查与危险因素分析.ActaTrop, 2007, 104(1):38-51.[英]
^{1 瑞士热带病所}

2 大理州血吸虫病防治所 3 洱源县血防站

- 米永年,陈韶红,陈耀青,常正山:新型广谱驱虫药氨基苯脒类化合物对感染旋毛虫小鼠的疗效的初步观察.中国兽医寄生虫病,2007,15(2):9-12.
- 童小妹,常正山,孙惠珍:寄生虫标本馆——宣传人体寄生虫病防治知识的重要基地.国际医学寄生虫病杂志,2007,36(6):334-335.
- 余森海:"传统"寄生虫学的传承与发展.中国寄生虫学与寄生虫病杂志,2007,25(3):161-162
- 郑彬,汤林华,马雅军¹,王学忠²,施文琦,周水森:微卫星锚定 PCR 技术研究云南微小按蚊 群体遗传结构.热带医学杂志,2007,7(6):529-533. 1解放军第二军医大学 2云南省寄生虫病防治所
- 陈韶红,李浩,周晓农:卫氏并殖吸虫感染循环抗原检测方法的建立与应用.中国寄生虫 学与寄生虫病杂志,2007,25(6):523-525.
- 刘海鹏,曹建平,沈玉娟,陈有贵¹,李小红,卢潍媛,徐馀信,刘宜升,刘述先,周晓农,汤林华: 隐 孢 子 虫 牛 源 分 离 株 的 分 离 和 鉴 定 * . 中 国 寄 生 虫 学 与 寄 生 虫 病 杂 志,2007,25(2):81-86.
 - * 国家"十五"科技攻关项目(No. 2003BA712A03-06) 1 徐州医学院
- 刘海鹏,曹建平,李小红,卢潍媛,沈玉娟,徐馀信,臧炜,刘述先:安氏隐孢子虫热休克蛋白 编码基因的克隆、表达和分析*.中国寄生虫学与寄生虫病杂志,2007,25(3):163-170.
 *国家 "+五" 科技攻关项目 (No. 2003BA712A03-06)
- 陈韶红,周晓农,张永年,陈家旭:卫氏并殖吸虫感染犬循环抗原和特异性抗体的动态观察.中国兽医寄生虫病,2007,15(5):11-14.
- 陈韶红,李浩,陈家旭,常正山,周晓农:对并殖吸虫病患者外周血中嗜酸性粒细胞相关性的初步观察.中国兽医寄生虫病,2007,15(1):17-19.

* 国家自然科技资源平台项目(2005DKA21104)

陈韶红,周晓农:我国并殖吸虫病免疫诊断研究进展*. 国际医学寄生虫病杂志, 2007, 34(1):21-24.

*科技部自然资源平台项目(2005DKA21104)

▶ 钟新华¹,冯耀宇,张玉良⁻¹,Lieberwirth I², Knoll W¹: 非水相醇解途径制备形貌可控的 ZnO 纳米晶. Small, 2007,3 (7):1194-1199.[Eng]

```
    1 华东理工大学化学学院
    2 德国马普所
```

- 冯耀宇, Ortega Y¹, 何国声², Das P³, 徐梅倩², 张西臣⁴, Fayer R⁵, Gatei W⁶, Cama V⁶, XIAO Li-hua⁶:牛隐孢子虫和鹿基因型在不同地理环境的牛中的广泛分布. Vet Parasitol, 2007, 144(1-2):1-9. [Eng]
 1位治亚大学食品安全研究中心
 2中国农业科学院动物寄生虫病所
 - 3 印度 Rajendra 医学科学研究所
 - 4 吉林大学畜牧兽医学院
 - 5 美国农业部动物和资源研究所
 - 6 美国疾病预防控制中心寄生虫病研究部
- ▶ 冯耀宇, Alderisio KA¹, Yang Wen-li², Blancero LA¹, Kuhne WG¹, Nadareski CA¹, Reid M¹, Xiao Li-hua²: 纽约水域周围野生动物中隐孢子虫的基因型研究. Appl Environ Microbiol, 2007, 73(20):6475-6483. [Eng].

1 纽约市环保局 2 美国疾病预防控制中心寄生虫病研究部

- ▶ 钟新华¹, 冯耀宇, 张玉良¹: 在有机胺介质中简易可重复性合成具有长时间粒子大小 及尺寸分布稳定性的发红光的 CdSe 纳米晶. J Phys Chem C, 2007, 111(2):526-531.
 [Eng]
 1^{半东理工大学化学学院}
- ▶ 钟新华¹, 冯耀宇, 张玉良¹, 顾震宇¹, 邹雷¹: 通过阳离子交换反应简便制备发紫光到 橙光的 Cd_xZn_{1-x}Se 合金纳米晶. Nanotechnology, 2007, 18:1-6.
 1 单东理工大学化学学院
- ▶ 肖树华, 詹斌¹, 薛剑, Goud GN¹, Loukas A¹, Liu Y, Williamson A¹, Liu S, Deumic V¹, Hotez P¹.用人的美洲钩虫感染的仓鼠(Mesocricetus auratus)评价作疫苗用的重组钩虫 抗原. Exp Parasitol, 2007,6.[Eng].

1 乔治华盛顿大学

薛剑, Utzinger J¹, 张永年, Tanner M¹, Keiser J¹, 肖树华: 蒿甲醚和三苯双脒对感染犬的肺吸虫无效的实验治疗. Parasitology Research, 2007, 12[英]
 1 瑞士热带病所

§ 7. LIST OF PUBLICATIONS

PUBLISHED BOOK

PAN Wei-qing edit. CAO Jian-ping. Schistosomoiasis. Parasite Biology: Research and Application. 1st, Chemical Industry Press. 2007.

SCHISTOSOMOIASIS

WANG Xian-hong, ZHOU Xiao-nong, LI Yuan-lin¹, LV Shan, LI Lan-hua, JIA Tie-wu, CHEN Shao-rong¹, YANG Zhong¹, FANG Wen¹, CHEN Feng¹: Evaluation of two tests for detecting *Schistosoma Japonicum* infection using a Bayesian approach*. Chin J Health Sta, 2007, 24(4):361-363.

* Supported by the National Science Foundation of China (No. 30590373) and UNICEF/ UNDP/ World Bank/ WHO special program for research and training the tropical diseases (TDR) (No. A30298) 1 The Institute of Research and Control on Schistosomiasis in Dali State

YANG Kun, WANG Xian-hong, WU Xiao-hua, YANG Guo-jing¹, JIA Tie-wu, ZHOU Xiao-nong: Application of spatial epidemiological technology in schistosomiasis control*. Chin J Public Health, 2007, 23(8):1017-1019.

* Supported by the National Science Foundation of China (No. 30590373) and Jiangsu Preventive Medicine Association(Y2004-33) 1 the Jiangsu Schistosome Disease Prevention and Control Research Institute

- DENG Yao, ZHOU Xiao-nong: Social factors of schistosomiasis transmission in China. Chin J Schisto Control, 2007, 19(5):393-397.
- DANG Hui, WANG Qiang, ZHOU Xiao-nong, GUO Jia-gang, WU Xiao-hua: Proportion analysis on the sampling of the second and third nation wide epidemiological survey for schistosomiasis in the endemic areas. Chin J Pathogen Biology, 2007, 2(2):133-136.
- ZHU Rong, DANG Hui, GUO Jia-gang: Surveillance on schistosomiasis in China in 2006. Chin J Schisto Control, 2007, 19(4):257-262.
- WU Xiao-hua, XU Xing-jian¹, XIAO Bang-zhong², WANG Ru-bo, DAI Yu-hai¹, XU Jing, WU Cheng-guo2, WEI Feng-hua¹, ZHOU Xiao-nong, ZHENG Jiang: Study on the risk factors of schistosomiasis transmission in the Three Gorges Reservoir Areas II Influence of the socioeconomic development on schistosomiasis transmission*. Chin J Schisto Control, 2007, 19(3):183-187.

^{*} Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China (No. 2001BA705B-08) 1 Institute of Schistosomiasis Control, Hubei Center for Disease Control and Prevention

² Chongqing Center for Disease Control and Prevention

YANG Zhong¹, XU Bin, WANG Wei¹, FENG Zheng, WEI Dong-zhi¹, HU Wei: Cloning ≻ and fusion expression of adenosine deaminase of Schistosoma japonicum*. Chin J Parasitol Parasit Dis, 2007, 25(1):6-11.

* Supported by the National Science Foundation of China (No. 30570429) and Shanghai Science and Technology Commission, "Oimingxing" Talent Project (No. 040MX1455) 1 State Key Laboratory of Bioreactor Engineering, New World Institute of Biotechnology, East China University of Science and Technology

- YU Qing, BAO Zi-ping, CAO Chun-li, ZHU Hong-qing, GUO Jing-gang: Application of \geq Globe geographical positioning with wireless communication monitoring and supervision system for field survey in areas endemic for schistosomiasis. China J Prev Med, 2007, 41(5):361-364.
- ZHOU Xiao-nong, JIANG Qing-wu¹, WU Xiao-hua, ZHAO Gen-ming¹, LIN Dan-dan², ⊳ ZHANG Shi-qing³, WANG Tian-ping³, GUO Jia-gang, XU Jing, WANG Shi-ping⁴, YIN Zhi-cheng⁵, WANG Xiu-fen⁶, WANG Li-ying⁷: The function and evolution of the criteria for control and elimination of schistosomiasis in China. Chin J Schisto Control, 2007, 19(1):1-4.

1 School of Public Health, Fudan University

2 Jiangxi Institute of Parasitic Diseases, Nanchang

- 3 Anhui Institute of Parasitic Diseases, Wuhu
- 4 Central South University
- 5 Sichuan Institute of Parasitic Diseases, Chengdu
- 6 Yunnan Institute of Parasitic Diseases, Dali
- 7 Ministry of Health, Beijing
- ZHOU Xiao-nong, CAI Li¹, ZHANG Xiao-ping¹, SHENG Hui-feng, MA Xing-bao¹, JIN \triangleright Yan-jun¹, WU Xiao-hua, WANG Xian-hong, WANG Long-ying¹, LIN Tao², SHEN Wei-guo³, LU Jing-qing², DAI Jing: Potential risks for transmission of schistosomiasis caused by mobile population in Shanghai*. Chin J Parasitol Parasit Dis, 2007, 25(3):180-184.

- * Supported by Shanghai Association for Science and Technology Policy Research project (No. 20040506)
- 1 Shanghai Municipal Center for Disease Control and Prevention
- 2 Shanghai Pudong Center for Disease Control and Prevention
- 3 Shanghai Minhang Center for Disease Control and Prevention
- YANG Zhong¹, HU Wei, SU Jin², MA Li², LI Yi-xue³, FENG Zheng, WEI Dong-zhi: \triangleright Bioinformatic identification and analysis of Schistosoma japonicum adenine phosphoribosyltransferase*. J South Med Univ, 2007, 27(3):272-275.

* Supported by the National Science Foundation of China (30570429)

1 State Key Laboratory of Bioreactor Engineering, New World Institute of Biotechnology, East China University of Science and Technology

2 Institute of Molecular Immunology, School of Biotechnology, Southern Medical University

3 Shanghai Center for Bioinformation Technology

 \geq CHEN Shao-hong, LI Hao, CHEN Jia-xu, CHANG Zheng-shan, ZHOU Xiao-nong: Preliminary Observation Of Relativity Of Eosinophils in Peripheral Blood Patients With Paragonimiasis. Chinese Journal of Veterinary Parasitology, 2007, 15(1):17-19

* Supported by National Natural Sciences and Technology Resources of China (2005DKA21104)

HUANG Cheng-yu¹, LU Yan, WANG Wei¹, JU Chuan, FENG Zheng, YANG Zhong¹, WANG Sheng-yue², HU Wei: Cloning, Expression of *Schistosoma japonicum* Elastase Gene and its Stage-specific Transcription*. Chin J Parasitol Parasit Dis, 2007, 25(5):359-363.

* Supported by 973 National Key Project (No. 2003CB716804); 863 National Key Project (No. 2004AA2Z1010, 04DZ14010); the National Science Foundation of China (No. 30400562); Shanghai Science and Technology Commission, "Qimingxing" Talent Project (No. 04QMX1455); TMRC (No. 5P50A1039461-10)

1 Biotechnology School, East China University of Science and Technology

- LUO Xing-jian¹, WU Cheng-guo¹, ZHOU Xiao-nong, XIAO Bang-zhong¹, CHEN Wei¹: Baseline study on the characteristics of antibody level against *Schistosoma japonicum* in the Three Gorges Reservoir Areas. J Trop Med, 2007, 7(9):909-913. ¹ Center for Disease Control and Prevention of Chongqing
- YANG Guo-jing¹, Utzinger J², SUN Le-ping¹, HONG Qing-biao¹, Vounatsou P², Tanner M², ZHOU Xiao-nong: Effect of temperature on the development of *Schistosoma japonicum* within *Oncomelania hupensis*, and hibernation of *O. hupensis*. Parasitol Res, 2007, 100(4):695-700.[Eng]

1 Jiangsu Institute of Parasitic Diseases 2 Swiss Tropical Institute

CHEN Zhao, ZHOU Xiao-nong, YANG Kun, WANG Xian-hong, YAO Zhen-qi¹, WANG Tian-ping², YANG Guo-jing³, YANG Ying-jing¹, ZHANG Shi-qing², WANG Jian, JIA Tie-wu, WU Xiao-hua: Strategy formulation for *schistosomiasis japonica* control in different environmental settings supported by spatial analysis: a case study from China.

Geospatial Health, 2007, 1(2):223-231.[Eng]

1 Dangtu Institute for Schistosomiasis Control

2 Anhui Institute of Parasitic Diseases

3 Jiangsu Institute of Parasitic Diseases

SHEN Yu-juan¹, XIA Chao-ming¹, CAO Jian-ping, XU Yu-xin, LI Xiao-hong, LIU Hai-peng, LU Wei-yuan, LIU Shu-xian: Cloning and expression of the gene encoding hypoxanthine-guanine phosphoribosyltransferase of *Schistosoma japonicum**. Chin J Schisto Control, 2007, 19(3):165-169.

* Supported by the National Science Foundation of China (30371262); 863 National Key Project (2006AA02Z444); the Key Science and Technology Project of the Tenth Five-Year Plan of Shanghai (03DZ19231); Biological Medicine Key Science and Technology Research Project (064319026)

1 School of Medicine, Suzhou University

Steinmann P¹, ZHOU Xiao-nong, Matthys B¹, LI Yuan-lin², LI Hong-jun³, CHEN Shao-rong², YANG Zhong², FANG Wen², JIA Tie-wu, LI Lan-hua, Vounatsou P¹, Utzinger J¹: Spatial risk profiling of *Schistosoma japonicum* in Eryuan county, Yunnan province, China. Geospatial Health, 2007, 2(1):59-73.[Eng]

² Chinese National Human Genome Center at Shanghai

¹ Swiss Tropical Institute

² Institute of Research and Control of Schistosomiasis in Dali Prefecture

3 Eryuan County Schiistosomiasis Control Station

ZHOU Xiao-nong, GUO Jia-gang, WU Xiao-hua, JIANG Qing-wu¹, ZHENG Jiang, DANG Hui, WANG Xian-hong, XU Jing, ZHU Hong-qing, WU Guan-ling², LI Yue-sheng³, XU Xing-jian⁴, CHEN Hong-gen⁵, WANG Tian-ping⁶, ZHU Meng-chang⁷, QIU Dong-chuan⁸, DONG Xing-qi⁹, ZHAO Gen-ming¹, ZHANG Shao-ji⁵, ZHAO Nai-qing¹, XIA Gang¹⁰, WANG Li-ying¹⁰, ZHANG Shi-qing, LIN Dan-dan⁵, CHEN Ming-gang, HAO Yang¹⁰: Epidemiology of Schistosomiasis in the People's Republic of China, 2004. Emerg Infect Dis, 2007, 13(10):1470-1476.[Eng]

Fudan University
 Nanjing Medical University
 Hunan Institute of Parasitic Diseases
 Hubei Institute of Parasitic Diseases
 Jiangxi Institute of Parasitic Diseases
 Anhui Institute of Parasitic Diseases
 Jiangsu Institute of Parasitic Diseases
 Sichuan Institute of Parasitic Diseases
 Yunnan Institute of Endemic Diseases

GUO Jian, YAN Zi-zhu, WU Ying, YU Qing, BAO Zi-ping, BAO Yi-fang, YANG Yue-tao, QIAN Cui-zhen, XU Jing, HU Shao-liang¹, GUO Jia-gang: Investigation of infection time of schistosomiasis japonica with antibody difference ratio method. Int J Med Parasit Dis, 2007, 34(1):16-20.

1 Shenzhen Combined Biotech Co. Ltd

TONG Qun-bo, LIU Shu-xian, LI Xiao-hong, XU Yu-xin, SHEN Yu-juan, CAO Jian-ping: Cloning and expression of gene encoding myophilin-like protein of Schistosoma japonicum and study on the antigenicity of recombinant protein*. Chinese Journal of Schistosomiasis Control, 2007, 19(4):247-251

* Supported by the National Science Foundation of China (30371262); 863 National Key Project (2006AA02Z444, 2004AA215240, 2004AA2Z3520); the Key Science and Technology Project of the Tenth Five-Year Plan of Shanghai (03DZ19231); Biological Medicine Key Science and Technology Research Project (064319026)

WANG Wen-qin¹, LI Xiao-hong, LIU Shu-xian, SONG Guang-cheng, XU Yu-xin, CAO Jian-ping: Cloning and expression of the gene encoding Schistosoma japonicum Glyceraldehyde-3-phosphate dehydrogenase*. Chinese Journal of Schistosomiasis Control, 2007, 19(3): 170-174

* Supported by the National Science Foundation of China (30371262); 863 National Key Project (2006AA02Z444, 2004AA215240, 2004AA2Z3520); the Key Science and Technology Project of the Tenth Five-Year Plan of Shanghai (03DZ19231); Biological Medicine Key Science and Technology Research Project (064319026) 1 School of Medicine; Huzhou University

XU Jing, CHEN Nian-gao¹, FENG Ting, WANG En-mu², WU Xiao-hua, CHEN Hong-gen¹, WANG Tian-ping², ZHOU Xiao-nong, ZHENG Jiang: Effectiveness of Routinely Used Assays for the Diagnosis of Schistosomiasis japonica in the Field*. Chin J Parasitol Parasit Dis, 2007, 25(3):175-179

¹⁰ Ministry of Health, China

* Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China (No. 2004BA718B12) 1 Jiangxi Provincial Institute of Parasitic Diseases

2 Anhui Institute of Schistosomiasis Control

JIANG Xu-gan¹, FU Xing-li¹, CHEN Sheng-xia¹, XU Hui-juan¹, Shuai Lian-yun¹, CAO Jian-ping, QIU Jin-bo¹: Analysis on soluble antigen and its fraction antigen of *Schistosoma japonicum* adult and egg*. J Jiangsu Univ (Med), 2007, 17(1):19-22, 56.

* Supported by University of Jiangsu Province Natural Science Foundation-funded projects (01KJB310012) 1 School of Medical Technology, Jiangsu University

YU Qing, ZHAO Gen-ming¹, CAO Chun-li, HUANG Shao-yu², ZHANG Hong-man³, ZHANG Jian-feng⁴, GUO Jia-gang: Cost-effectiveness analysis on screening for surveillance of schistosomiasis among population in transmission interrupted areas. Chin J Schisto Control, 2007, 19(1):46-49.

- 4 Institute of Parasitic Diseases, Zhejiang Academy of Medical Sciences
- JIA Tie-wu, ZHOU Xiao-nong, WANG Xian-hong, Utzinger J¹, Steinmann P¹, WU Xiao-hua: Assessment of the age-specific disability weight of chronic schistosomiasis japonica. Bull World Health Organ, 2007, 18(6):458-465.[Eng]

1 Swiss Tropical Institute

CHEN Jia-xu, LIU Shu-xian, CAO Jian-ping, SONG Guang-cheng, XU Yu-xin: Tissue reactions to schistosomula in C57BL/6 mice immunized with Sjc97 DNA vaccine after challenged with cercariae of Schistosoma japonicum*. Chinese Journal of Schistosomiasis Control, 2007, 19(1):17-20

* 863 National Key Project (2001AA215151)

XIAO SH, Keiser J¹, Chollet J¹, Utzinger J¹, DONG Y, Endriss Y¹, Vennerstrom JL¹, Tanner M¹: In vitro and in vivo activities of synthetic trioxolanes against major human schistosome species. Antimicrob Agents Chemother, 2007, 51(4):1440-1445[Eng] 1 Swiss Tropical Institute

MALARIA

- SHENG Hui-feng, TANG Lin-hua: Surveillance and forecasting of malarial epidemics. Int J Med Parasit Dis, 2007, 34(3):163-168.
- ➢ WANG Duo-quan, TANG Lin-hua, ZHOU Shui-sen, GU Zheng-cheng: Evaluation on current malaria prevalence using capture-recapture method in national sentinel points

¹ School of Public Health, Fudan University

² Guangdong Provincial Institute of Parasitic Diseases

³ Guangxi Zhuang Autonomous Region Center for Disease Control and Prevention

malaria. Chin J Epidemiol, 2007, 28(11):1105-1107.

XIA Zhi-gui, ZHANG Hua-xun¹, CHEN Kai-jun², SU Guo-an², CHEN Fa-feng³, HUANG Guang-quan¹, TANG Lin-hua: Local knowledge, attitude and practices (KAPs) on malaria: A baseline study of caochong village in Hubei Province, China. China Trop Med, 2007,7(4):492-496. [Eng]

1 Hubei Institute for Infectious Diseases Control and Prevention (Hubei CDC) 2 Zaoyang CDC 3 Ouwer Tompchin Hospital

- 3 Quwan Township Hospital
- SHENG Hui-feng, ZHENG Xiang, SHI Wen-qi, XU Jian-jun¹, JIANG Wei-kang, WANG Duo-quan, TANG Lin-hua: Factors affecting malaria outbreak in Congjiang County of Guizhou Province. Chin J Parasitol Parasit Dis, 2007, 25(3):225-229.

1 Guizhou Provincal Center for Disease Control and Prevention

- ZHANG Guo-qing, TANG Lin-hua: The application of gene chip technology in malaria research. International Journal of Medical Parasitic Diseases, 2007, 34(4), 180-183.
- ZHENG Bin, LIU Yan, WU Song, WANG Xue-zhong¹: Development of a PCR-based method for detection of *Plasmodium falciparum* infected mosquitoes. International Journal of Medical Parasitic Diseases, 2007, 34(3), 119-121

1 Institute of Parasitic Diseases Yunnan Province

ZHOU Shui-sen, HUANG Fang, TANG Lin-hua, ZHENG Xiang, SHEN Yu-zu¹, SU Yun-pu², HUANG Guang-quan³: Study on the spatial distribution of malaria in Yellow River and Huai River areas based on the "Kriging" method*. Journal of Pathogen Biology, 2007, 2(3):204-206.

* Supported by Program on Research for Public Good, MOST, China (No2005DIB1J092)

1 Anhui Center for Disease Control and Prevention

2 Henan Center for Disease Control and Prevention 3 Hubei Center for Disease Control and Prevention

ZHANG Guo-qing, TANG Lin-hua, GUAN Ya-yi, ZHOU Shui-sen, ZHENG Bin, HUANG Fang, WU Song, LIU Yan: Multiplex PCR for Analysis of the Plasmodium falciparum Drug

Resistance Molecular Markers * . Chin J Parasital Patasit Dis, 2007, 25(6):451-456. * Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China (No. 2004BA718B13)

WANG Jun-yun, SHI Feng, YANG Yue-tao, GAO Chun-hua, BAO Yi-fang, TANG Lin-hua: Establishment and evaluation of Colloid Gold Labeled Immunochromatographic Strip Test for Rapid Diagnosis of Malaria. Chin J Parasital Patasit Dis, 2007, 25(5):415-418.

* Technological development by the Ministry of Science and Technology Research Institute of special fund (No. 2003-EG150182)

- ZHOU Shui-sen, HUANG Fang, SHEN Yu-zu¹: Application of ARIMA model on prediction of malaria incidence*.Journal of Pathogen Biology, 2007, 2(4):284-286.
 * Supported by Program on Research for Public Good, MOST, China (No2005DIB1J092) 1 Anhui Center for Disease Control and Prevention
- ZHOU Shui-sen, WANG Yi, TANG Lin-hua: Malaria Situation In China In 2007. Chinese Journal of Parasitology and Parasitic Diseases, 2007, 25(6):439-441

LEISHMANIASIS

- JIN Chang-fa, HONG Yu-mei, XIONG Guang-hua: Research progress on caninotic and euzoonotic type visceral leishmaniasis in China. Int J Med Parasit Dis, 2007, 34(5):227-230.
- GAO Chun-hua, GUAN Li-ren, WANG Jun-yun: Research progress on transmission mechanism of human Leishmania and their vector sandfly species. International Journal of Medical Parasitic Diseases, 2007, 34(3), 113-118.
- WANG Jun-yun¹, FENG Yu², GAO Chun-hua¹, JIN Chang-fa¹, CHEN Sheng-bang², ZHANG Chou-ji², HE Jin-ping², YANG Chen-ming², YANG Yue-tao¹, BAO Yi-fang¹:Asymptomatic Leishmania Infection in Human Population of Wenxian County, Gansu Province * . Chin J Parasital Patasit Dis, 2007, 25(1):62-64.

* Supported by TSA foundation of WHO (No.1079946)

1 Gansu Provincial Center for Disease Control and Prevention

SNAILS

- WU Xiao-hua, ZHOU Xiao-nong: Molluscicidal effect and application of Phytolacca dodecandra. Chin J Schisto Control, 2007, 19(1):78-80.
- ZHU Dan, LI Hong-jun¹, LIU He-xiang, ZHANG Yi, GUO jian, LIANG You-sheng¹, ZHOU Xiao-nong: Enzyme histochemistry: the effect of META-Li on *Oncomelania hupensis*. Chin J Parasitol Parasit Dis, 2007, 25(3):198-202.

1 the Jiangsu Schistosome Disease Prevention and Control Research Institute

LIU He-xiang, ZHANG Yi, LV Shan, ZHU Dan, WANG Xian-hong, HU Ling, ZHOU Xiao-nong: A comparative study of three methods in detecting *Angiostrongylus cantonensis* larvae in lung tissue of *Pomacea canaliculata**. Chin J Parasitol Parasit Dis, 2007, 25(1):53-56.

* Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China (No. 2003BA712A09-01)

ZHU Hong-qing, ZHONG Bo¹, CAO Chun-li, BAO Zi-ping, WAN Xue-xiang², WANG Zhi-xiang², CHEN Lin¹, GUO Jia-gang: Molluscicidal effect of Rongbao Powder in schistosomiasis mountainous areas. Chin J Schisto Control, 2007, 19(3):212-216.

1 Institute of Parasitic Diseases, Sichuan Provincal Center for Disease Control and Prevention 2 Dongpo District Station of Schistosomiasis Control

ZHU Dan, LI Hong-jun¹, LIU He-xiang, ZHANG Yi, GUO jian, LIANG You-sheng¹, ZHOU Xiao-nong: Enzyme Histochemistry: The Effect of META-Li on Oncomelania

hupensis. Chin J Parasit Dis, 2007, 25(3):198-203.

1 Jiangsu Institute of Parasitic Diseases

YANG De-ping, WU Yun-zhao¹, ZHU Rong, ZHANG Li-juan, GUO Jia-gang: A study of environmental changes on new snail habitat though multi-temporal relative radiometric normalized TM images*. China J Prev Med, 2007, 41(5):357-360.

* Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China(2004BA718B06) 1 Institute of Remote Sensing Applications, Chinese Academy of Sciences, State Key Laboratory of Remote Sensing Science

- GUO Jia-gang: A new macro/micro areas of studying snail-ecology would be initiated by the remote sensing technology. China J Prev Med, 2007, 41(5):342-343.
- ZHANG Yi¹, ZHU Dan, LI Hong-jun¹, LIU He-xiang, LIANG You-sheng¹, XU Xue-nian, LI Wen-xin²: Mechanism of action of a plant molluscide HL on Oncomelania hupensis *

Chinese Journal of Zoonoses, 2007, 23(10):978-981.

* 863 national key project (2004AA2Z3550) 1 Jiangsu Institute of Schistosomiasis 2 Hua Zhong Normal University

LIU He-xiang, ZHANG Yi, LV Shan, ZHU Dan, WANG Xian-hong, WU Ying, HU Ling, WU Shi-fang, ZHOU Xiao-nong: Effect of temperature on the infection with *Pomacea canaliculata* by *Angiostrongylus cantonensis**. Chin J Zoonoses, 2007, 23(9):923-926.

* Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China (No. 2003BA712A09-01)

THE OTHERS

- WANG Xian-hong, ZHOU Xiao-nong: Application of Bayesian statistics in estimation and analysis of prevalence*. Chin J Health Sta, 2007, 24(1):86-89.
 *Supported by the National Science Foundation of China (No. 30590373) and UNICEF/ UNDP/ World Bank/ WHO special program for research and training the tropical diseases (TDR) (No. A30298)
- LI Lan-hua, ZHOU Xiao-nong: Research progress on pathogenicity and genetic diversity of Blastocystis hominis. Int J Med Parasit Dis, 2007, 34(1):28-33.

YANG Kun¹, HANG De-rong¹, YAN Wei-an¹, YANG Guo-jing¹, WU He-zhen¹, ZHOU Xiao-nong: Study on selection for landfill location with GIS*. Admin Tech Environ Monit, 2007, 19(1):12-14.

* Supported by the Natural Science Foundation of Jiangsu (BK2001158)

1 the Jiangsu Schistosome Disease Prevention and Control Research Institute

- HONG Yu-mei, CHEN Qin, JI Xiao-yun, LIU Yue: Summary of reader's questionnaire on "International Journal of Medical Parasitic Diseases". Int J Med Parasit Dis, 2007, 34(6):335-336.
- SU Zhong-wei: Pongdering over the development of IPD Human Resources. China Health Human Resources, 2007, 8: 56-57.
- WANG Qin-mei, LAN Qin-xian, WU Jia-tong, ZHENG Sai-jing¹, JIN Yong-ming¹, XIANG Li-zhen, QIAN Ying-jun: Neutral red cytotoxicity assay of smoke condensate of some domestic virginia type cigarettes*. Tob Sci & Tech, 2007, 5:41-43.
 * Supported by Shanghai Tobacco (Group) Corp. (No. 04110)

1 Technology Center of Shanghai Tobacco (Group) Corp.

CHEN Shao-rong¹, YANG Zhong¹, LI Yuan-lin¹, Steinmann PJ², LI Hong-jun³, CHEN Feng¹, LI Lan-hua, MA Jun-hua¹, JIA Tie-wu, WANG Shang-wei¹, XU Jing, FANG Wen¹, YANG Hui¹, DUAN Yu-chun¹, LIU Yu-hua¹, ZHOU Xiao-nong: Investigation on current status of important parasitic diseases in Eryuan County of Yunnan Province*. Chin J Schisto Control, 2007, 19(1):64-67.

* Supported by the National Science Foundation of China (30590370)

GU Deng-an, JIN Chang-fa, LAN Qin-xian, ZHANG Chou-ji¹, LI Fan¹, ZHANG Yi: Preliminary test of *Phlebotomus* surveillance by light-traps. Chin J Parasitol Parasit Dis, 2007, 25(2):160, inside back cover.

1 Gansu Provincial Center for Disease Control and Prevention

Steinmann P¹, ZHOU Xiao-nong, DU Zun-wei², JIANG Jin-yong², WANG Li-bo², WANG Xue-zhong², LI Lan-hua, Marti H¹, Utzinger J¹: Occurrence of *Strongyloides stercoralis* in Yunnan Province, China, and Comparison of Diagnostic Methods*. PLoS Negl Trop Dis, 2007, 1(1):e75-e80.[Eng]

* Supported by the Swiss National Science Foundation (SNSF; No. PP00B-102883) and the Ministry of Science and Technology, China (2005DKA21104) 1 Swiss Tropical Institute

LI Lan-hua¹, ZHANG Xiao-ping², LV Shan, ZHANG Ling, Yoshikawa H³, WU Zhi-liang⁴,

¹ Dali Institute of Schistosomiasis Control

² Swiss Institute of Tropical Diseases

³ Eryuan Anti-Schistosomiasis Station

² Yunnan Institute of Parasitic Diseases

Steinmann P^5 , Utzinger J^5 , TONG Xiao-mei, CHEN Shao-hong, ZHOU Xiao-nong: Cross-sectional surveys and subtype classification of human Blastocystis isolates from four epidemiological settings in China. Parasitol Int, 2007, 102(1):83-90. [Eng]

1 Department of Preventive Medicine, Weifang Medical University

5 Swiss Tropical Institute

XIAO Shu-hua, WU Zhong-xing¹, ZHANG Jian-hui², WANG Shan-qing³, WANG Shi-hai⁴, QIU Dong-chuan⁵, WANG Chong²: Clinical Observation on 899 Children Infected with Intestinal Nematodes and Treated with Tribendimidine Enteric Coated Tablets. Chin J Parasitol Parasit Dis, 2007, 25(5):372-375.

1 Jiangsu Provincial Institute of Parasitic Diseases

4 Guizhou Provincial Center for Disease Control and Prevention

5 Sichuan Provincial Center for Disease Control and Prevention

- SHENG Hui-feng, FU Xiu-lan, BO Wei, HU Ya-qing, DAI Jing: Citation analysis of papers from "Chinese Journal of Parasitology and Parasitic Diseases" in 5 years. J Prev Med Inf, 2007, 23(1):61-64.
- XIAO Shu-hua: Study Progress on the Mode of Action of Praziquantel Against Schistosomes. Chin J Parasitol Parasit Dis, 2007, 25(6):492-502.
- GUO Jian, CHANG Zheng-shan, ZHANG Yong-nian: One case about Sparganosis's invasion of human spinal. Chin J Parasitol Parasit Dis, 2007, 25(5): inside back cover.
- Steinmann P¹, ZHOU Xiao-nong, LI Yuan-lin², LI Hong-jun³, CHEN Shao-rong², YANG Zhong², FANG Wen², JIA Tie-wu, LI Lan-hua, Vounatsou P¹, Utzinger J¹: Helminth infections and risk factor analysis among residents in Eryuan County, Yunnan Province, China. Acta Trop, 2007, 104(1):38-51.[Eng]

1 Swiss Tropical Institute

- ZHANG Yong-nian, CHEN Shao-hong, CHEN Yao-qing, CHANG Zheng-shan: Preliminary Observation of the Effect of Aminophenylamidines Compounds, A New Helminthic, on Trichinella Spiralis in Mice. Chin J Veterinary Parasit, 2007, 15(2):9-12.
- TONG xiao-mei, CHANG zheng-shan, SUN hui-zhen: Museum for Medical Parasitology-Propagandizing for Parasitology Preuentine Knowledge will be Important Base. International Journal of Medical Parasitic Diseases, 2007, 36(6):334-335.

² Center for Disease Control and Prevention of Shanghai

³ Department of Biological Science, Nara Women's University

⁴ Department of Parasitology, Gifu University Graduate School of Medicine

² Shandong Xinhua Pharmaceutical Company

³ Hainan Provincial Center for Disease Control and Prevention

² Institute of Research and Control of Schistosomiasis in Dali Prefecture

³ Eryuan County Schiistosomiasis Control Station

- YU Sen-hai: Inheritance and development of "Traditional parasitology". Chinese Journal of Parasitology and Parasitic diseases, 2007, 25(3):161-162.
- ZHENG Bin, TANG Lin-hua, MA Ya-jun¹, WANG Xue-zhong², SHI Wen-qi, ZHOU Shui-sen: Population Genetics Study on Anopheles minimus in Yunnan Province by SSR-PCR. Journal of Tropical Medicine, 2007, 7(6):529-533.

1 The Second Military Medical University of People's Army of China 2 Institute of Parasitic Diseases of Yunnan Province

- CHEN Shao-hong, LI Hao, ZHOU Xiao-nong: Establishment and Application of Circulating Antigen Detection in Paragonimus westermani Infection. Chinese Journal of Parasitology and Parasitic Diseases, 2007, 25(6):523-525.
- LIU Hai-peng, CAO Jian-ping, SHEN Yu-juan, CHEN You-gui¹, LI Xiao-hong, LU Wei-yuan, XU Yu-xin, LIU Yi-sheng, LIU Shu-xian, ZHOU Xiao-nong, TANG Lin-hua: Isolation and Identification of an Isolate of Cow-origin Cryptosporidium sp * . Chinese Journal of Parasitology and Parasitic Diseases, 2007, 25(2):81-86.

* Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China (No. 2003BA712A03-06) 1 Xuzhou Medical College

LIU Hai-peng, CAO Jian-ping, LI Xiao-hong, LU Wei-yuan, SHEN Yu-juan, XU Yu-xin, ZANG Wei, LIU Shu-xian: Cloning, Expression and Analysis of the Heat Shock Protein of Cryptosporidium andersoni * . Chinese Journal of Parasitology and Parasitic Diseases, 2007, 25(3):163-170.

* Supported by the Key Science and Technology Project of the National Tenth Five-Year Plan of China (No. 2003BA712A03-06)

- CHEN Shao-hong, ZHOU Xiao-nong, ZHANG Yong-nian, CHEN Jia-xu: Dyanmics of Specific Antibody And Circulating Antigen In Sera From The Dogs Infected With Paragonimus Westermani. Chinese Journal of Veterinary Parasitology, 2007, 15(5):11-14.
- CHEN Shao-hong, LI Hao, CHEN Jia-xu, CHANG Zheng-shan, ZHOU Xiao-nong: Preliminary observation of relativity of eosinophils in peripheral blood patients with paragonimiasis*. Chin J Veterinary Parasit, 2007, 15(1):17-19.

* Supported by the Ministry of Science and Technology, China (2005DKA21104)

CHEN Shao-hong, ZHOU Xiao-nong: Research progress on immunodiagnosis of paragonimiasis in China*. Int J Med Parasit Dis, 2007, 34(1):21-24.

* Supported by the Ministry of Science and Technology, China (2005DKA21104)

> ZHONG Xin-hua¹, FENG Yao-yu, ZHANG Yu-liang¹, Lieberwirth I³, Knoll W¹:

Nonhydrolytic alcoholysis route to morphology-controlled ZnO nanocrystal*. Small, 2007.3 (7):1194-1199.[Eng]

* Supported by the National Natural Science Foundation of China (No. 20501005); Xuguang project (06SG33); the Program for New Century Excellent Talents in University of China (NCET-05-0382); the Deutsche Forschungsgemeinschaft (DFG) under the SFB 625. 1 Laboratory for Advanced Materials Department of Chemistry, East China University of Science and Technology 2 Max-Planck-Institute for Polymer Research

- FENG Yao-yu, Ortega Y¹, HE Guo-sheng², Das P³, XU Mei-gian², ZHANG Xi-chen⁴, \geq Fayer R^5 , Gatei W^6 , Cama V^6 , XIAO Li-hua⁶: Wide geographic distribution of cryptosporidium bovis and the deer-like genotype in bovines. Vet Parasitol, 2007, 144(1-2):1-9. [Eng]
 - 1 Center for Food Safty, University of Georgia, Griffin, USA
 - 2 Institute of Animal Parasitic Diseases, Chinese Academy of Agricultural Sciences, Shanghai, China
 - 3 Rajendra Memorial Research Institute of Medical Sciences, Patna, India

4 College of Animal Sciences and Veterinary Medicine, Jilin University, Changchun, China

5 Animal and Natural Resources Institute, Agricultural Research Service, U.S. Department of Agriculture, Beltsville, USA

6 Division of Parasitic Diseases, Centers for Disease Control and Prevention, Atlanta, USA

▶ FENG Yao-yu, Alderisio KA¹, Yang Wen-li², Blancero LA¹, Kuhne WG¹, Nadareski CA¹, Reid M¹, Xiao Li-hua²: Cryptosporidium genotypes in wildlife from a New York Watershed. Appl Environ Microbiol, 2007, 73(20):6475-6483. [Eng]

1 New York City Department of Environmental Protection, Valhalla, New York

2 Division of Parasitic Diseases, Centers for Disease Control and Prevention, Atlanta, Georgia

ZHONG Xin-hua¹, FENG Yao-yu, ZHANG Yu-liang¹: Facile and reproducible synthesis of \geq red-emitting CdSe nanocrystals in amine with long-term fixation of particle size and size distribution. J Phys Chem C, 2007, 111(2):526-531. [Eng] 1 Department of Chemistry, East China University of Science and Technology, Shanghai, China

ZHONG Xin-hua¹, FENG Yao-yu, ZHANG Yu-lian¹, GU Zhen-yu¹, ZOU Lei¹: A facile \geq route to violet- to orange-emitting $Cd_xZn_{1-x}Se$ alloy nanocrystals via cation exchange reaction. Nanotechnology, 2007, 18:1-6.

1 Laboratory for Advanced Materials, Department of Chemistry, East China University of Science and Technology

 \triangleright LI Lan-hua, ZHOU Xiao-nong, DU Zun-wei1, WANG Xue-zhong1 WANG Li-bo1, JIANG Jin-yong1, Yoshikawa H2, Steinmann P3, Utzinger J3, WU Zhi-liang4, CHEN Jia-xu, CHEN Shao-hong, ZHANG Ling: Molecular epidemiology of human Blastocystis in a village in Yunnan Province, China. Parasitol Int, 2007, 56(4):281-286. [Eng]

LIU Feng¹, HU Wei, CUI Shu-jian², CHI Ming², FANG Cai-yun¹, WANG Zhi-qin², YANG Peng-yuan¹, HAN Ze-guang¹: Insight into the host-parasite interplay by proteomic study of host proteins copurified with the human parasite, Schistosoma japonicum. Proteomics, 2007, 7(3):450-462.[Eng]

¹ Institute of Parasitic Diseases of Yunnan Province

² Department of Biological Science, Nara Women's University

³ Swiss Tropical Institute

⁴ Department of Parasitology, Gifu University Graduate School of Medicine

1 Department of Chemistry, Fudan University and Chinese National Human Genome Center at Shanghai

2 Shanghai-Ministry Key Laboratory of Disease and Health Genomics, Chinese National Human Genome Center at Shanghai

- 3 Institutes of Biomedical Sciences, Fudan University
- XIAO S, ZHAN B¹, XUE J, Goud GN¹, Loukas A¹, LIU Y, Williamson A¹, LIU S, Deumic V¹, Hotez P¹: The evaluation of recombinant hookworm antigens as vaccines in hamsters (Mesocricetus auratus) challenged with human hookworm, Necator americanus. Exp Parasitol, 2007, 6.[Eng]

1 The George Washington University

➤ XUE J, Utzinger J¹, ZHANG YN, Tanner M¹, Keiser J¹, XIAO SH: Artemether and tribendimidine lack activity in experimental treatment of *Paragonimus westermani* in the dog. Parasitology Research, 2007, 12[Eng]

1 Swiss Tropical Institute

§ 8.2007 年大事记

- ▶ 1月14日,经所文明建设领导小组审评,所党委同意,血吸虫病室等6个部门为本所 2006年度文明处室。
- 1月915日,根据卫生部疾控局的要求,我所组织5个暗访小组,分别对湖北、湖南、 江西、安徽和江苏湖区五省血吸虫病疫区有螺洲滩进行暗访,并于1月16日召开总 结汇报会。
- ▶ 1月15日,举办"朝鲜半岛疟疾研讨会",韩国、朝鲜与世界卫生组织西太区和世界卫 生组织东南亚区的官员共16人与会。
- ▶ 1月16-18日,召开"国际间日疟会议",来自菲律宾、泰国、柬埔寨、印度尼西亚、 韩国、朝鲜、中国、日本、世界卫生组织西太区和世界卫生组织东南亚区的官员共43 人与会。
- 1月22-23日,召开本所2007年工作会议,汤林华所长作了《2006年行政业务工作总结》和《2007年工作要点》的报告,中国疾控中心王宇主任、杨维中副主任及有关职能部门负责人出席会议。会议对2006年的文明处室和考核优秀人员进行了表彰;所领导班子成员向全所职工作述职报告,并进行了民主测评;经所学术委员会委员评审,5个项目和6个课题获得奖励。
- ▶ 1月22、24日,召开四届九次职代会,职工代表听取并审议所长报告,对所领导班子成员进行民主评议。
- ▶ 1月26日,我所2006度中青年基金通过评审,获得资助项目3项。
- 2月1-16日,开展送温暖工作,党、政、工、青和职能部门负责人分别看望离休老干部、老专家、身患疾病和生活困难的老同志共38名。
- 2月2日,汤林华所长、周晓农副所长赴南昌市参加湖区五省血吸虫病联防联控工作 会议。
- 2 月 7 日,"嗜人按蚊地区疟疾流行潜势及控制暴发流行的研究"课题组荣获 2005-2006 年度上海市卫生系统红旗文明岗。
- ▶ 2月8日,周晓农同志被评为市科教党委系统优秀纪检干部。

- 2月10日,卫生部疾控局、中国疾控中心和我所召开联席工作会议,对2007年寄生 虫病防治重点工作进行了探讨。
- ▶ 2月13日,全所职工在松江佘山大众国际会议中心举办寄生虫病所 2007 年迎春活动。
- 3月5-29日,根据上级要求,选派专业技术人员分别赴湖南安乡、湖北汉川、安徽贵池、江西进贤等血防联系点进行技术支持和挂职锻炼。
- 3月7日,"新型广谱驱虫药9901药理、药效学研究"项目通过了上海市科委组织的验收。
- ▶ 3月8-13日,举办了"Arcgis /Erdas/PCI 软件(地理信息系统及遥感技术)在寄生虫病防治中的应用"培训班。
- ▶ 3月15日,汤林华所长赴苏州参加"第八届 WHO 合作中心主任会议"。
- 3月16-18日,配合卫生部在上海召开"赴非洲抗疟工作人员培训教材审稿会"、"《血防条例》宣讲方案研讨会"及"包虫病防治技术方案研讨会"。
- ▶ 3月20日,市卫生局党委书记、局长陈志荣及有关职能部门负责人来所调研。
- 3月20日,盛慧锋(信息中心副主任)、张仪(媒介控制室副主任)均通过试用期考核,继续担任原职务。
- ▶ 3月25-30日,配合卫生部在青海西宁举办了"全国包虫病防治技术培训班"。
- ▶ 3月30日,我所获得(上海市社会治安综合治理委员会)"上海市平安单位"称号。
- ▶ 4月3日,所保密委员会主任周晓农与各部门负责人签定《保密责任书》。
- ▶ 4月4日,召开"寄生虫病所 2007 年党委工作会议", 党委书记蔡继红、纪委书记周 晓农分别总结和部署了 2006 年、2007 年党委和纪委的工作。
- 4月5日,周水森(疟疾室主任)、伍卫平(丝虫病、黑热病、包虫病室主任)、胡薇 (寄生虫病原与媒介生物学重点实验室副主任)、陈家旭(健康教育咨询检测中心副 主任〈主持工作〉)、章幼妹(科技业务处副处长〈正科级〉)、孙华荣(人事保卫处保 卫科科长〈正科级〉)均通过试用期考核,继续担任原职务。

- 4月9-12日,我所在江苏南京市召开了"2006年血吸虫病监测点总结会"和"血吸虫病防治健康教育研讨会",会议总结了2006年的监测工作,向各优秀监测点颁发了奖状。
- 4月11日,上海市教委、上海市就业指导中心、上海市卫生局干部人事处、中心人资 处和教育培训处有关领导来所,就本所培养的毕业生就业进沪办理户籍等问题调研, 并在相关问题上达成共识。
- ▶ 4月12-14日,汤林华所长赴河南洛阳参加"五省疟疾联防工作研讨会"。
- ▶ 4月13日,所领导分别与分管的处室负责人签定"寄生虫病所廉洁勤政责任书"。
- ▶ 4月17-20日,汤林华研究员赴瑞士参加"WHO被忽视热带病策略和技术咨询会"和"全 球被忽视热带病合作伙伴会议"。
- ▶ 4月20日,完成卫生部寄生虫病原与媒介生物学重点实验室的评估。
- ▶ 4月23-29日,开展为期一周的实验室安全周活动。
- 4月23-24日,举办《缅怀毛守白教授,弘扬勤奋、严谨、奉献精神》的展览。在青 浦福寿园举行"纪念毛守白教授逝世十五周年暨铜像揭幕仪式",中国疾控中心杨维中 副主任致辞并和上海市卫生局党委副书记李忠尧共同为铜像揭幕。
- ▶ 5月16-19日,我所在江苏无锡市举办了"慢性丝虫病社区关怀照料工作方案培训班"。
- 5月18日,在安徽芜湖召开了"全国血吸虫病监测点诊断试剂中期专家评估会",对目前血吸虫病监测点使用的诊断试剂质量进行评估。
- ▶ 5月18日,越南国家疟疾、寄生虫、昆虫研究所全球基金项目管理专家团一行8人来 所访问。
- 5月18-23日,配合卫生部在安徽省马鞍山市举办"全国血吸虫病流行省、市血防办主任、血防所所长培训班",对各级血防行政和专业机构领导开展了血防机构工作规范、诊断标准等方面的培训。
- 5月21日,我所专家参加了卫生部在湖南长沙召开的"《血吸虫病防治条例》宣讲活动启动会",周晓农副所长等专家作为宣讲团主要成员参与后续的宣讲活动。
- ▶ 5月 22-25日,在福建厦门组织召开"疟疾监测方案专家修订会",对疟疾监测方案进

行了修订和完善。

- ▶ 5月27-30日,美国乔治华盛顿大学一行5人来所访问,讨论与我所合作开展"人体钩 虫疫苗筛选计划"。
- ▶ 5月28-30日,配合卫生部在广西南宁举办"《疟疾防治技术方案》培训班",对各省 疟疾防治专业人员进行防治技术方案、应急预案、诊断标准等方面的培训。
- ▶ 5月30日-6月20日,我所专家参加由全国人大、卫生部等组织的对四川甘孜包虫病防治工作的督导调研活动。
- ▶ 6月1-30日,开展为期1个月的"规章制度宣传月"活动。
- 6月10-14日,我所在湖南安乡组织召开"防治血吸虫病健康教育评价题库和考核方案 草拟稿讨论会",规范统一血吸虫病健康教育问卷题库,并拟定了血防健教试点工作 考核评估方案。
- ▶ 6月12-29日,举办了"非洲国家传染病防治研修班",来自非洲22个国家的39位官员参加了培训。
- ▶ 6月18日,我所选派专业人员赴西藏林芝地区开展疟疾驻点支持工作。
- ▶ 6月26-28日,在杭州组织召开"2007年全国疟疾监测工作会议",对2006年全国疟疾监测工作情况进行了总结并布置了2007年疟疾监测工作。
- 7月2日,受卫生部委托,我所在上海召开《人体重要寄生虫病现状调查报告》定稿 会,组织专家对12个病种的全国报告和31个省的总结报告进行核对定稿。
- 7月3-6日,卫生部血吸虫病专家咨询委员会组织专家对四川血防达标考核准备工作 及山区血吸虫病防治策略进行现场调研。
- ▶ 7月9日,所工会举办"江山如此多娇"摄影展。
- 7月11日,伍卫平等16位同志被分别列为2006-2007年度本所高层次人才、紧缺人 才、优秀青年人才培养对象。
- 7月12-13日,召开"2007年上半年寄生虫病防治工作会议",对上半年寄生虫病防治 工作进行了总结,布置了下半年防治工作安排和预算执行计划。

- ▶ 7月16-20日,所党政工领导分别看望离退休老干部、老专家,为20多位老同志送去 清凉。
- ▶ 7月20日,组织疟防专家入藏,分两组分别在察隅、墨脱开展传疟媒介调查工作。
- ▶ 7月24日,组织3位疟疾防治专业技术人员赴安徽开展驻点技术支持,驻点2个月。
- ▶ 7月30日-8月3日,我所在河南郑州举办"全国寄生虫病媒介调查培训班"。
- 8月1-2日,受卫生部疾控局委托,我所组织专家在上海召开"消除丝虫病国家报告新 闻发布会材料准备会议",并对国家报告进行了研讨。
- ▶ 8月3-6日,我所在江苏无锡召开《寄调》汇编编辑加工会议,对《寄调》汇编进行 出版前的最后排版加工。
- 8月13-18日,我所在安徽歙县组织召开了"血吸虫病监测点工作会议"和"全球定位系统调查钉螺培训班"。
- 8月18~21日,受卫生部疾控局委托,我所组织专业人员对湖南、湖北、江西、安徽、 江苏、云南和四川等省开展了以传染源控制为主的血吸虫病综合治理措施落实情况及 工作质量的抽查及暗访。
- 8月21-22日,我所在上海召开"全国血吸虫病病人数推算工作和疫情达标预评估工作 启动会"。
- ▶ 8月22-23日,卫生部血咨委在上海组织召开了"血吸虫病检测试剂应用策略研讨会"。
- 8 月 24 日,卫生部新闻办组织中央电视台、新华社、光明日报、健康报等中央媒体 到我所集中采访我国消除丝虫病的防治策略、科学研究和老专家感人事迹等。
- ▶ 8月27-28日,配合卫生部在四川成都举办了"包虫病防治项目经验交流会"。
- ▶ 8月30-31日,配合卫生部在上海召开"我国消除丝虫病后的监测方案及对策研讨会"。
- ▶ 9月1-4日,我所有关专家陪同 WHO 专家对江西和云南两省的血防工作情况开展现场调研。
- ▶ 9月2-6日,汤林华所长赴泰国参加世界卫生组织"湄公河流域疟疾抗性监测会议"。

- ▶ 9月3-6日,我所配合WHO,在云南丽江组织召开"WHO/TDR 血吸虫病诊断工作会议"。
- 9月4-10日,在云南丽江组织召开"亚洲血吸虫病及重要蠕虫病网络第七次工作会议 暨寄生虫病疾病负担评价培训班"和"首届地理空间卫生学国际学术会议",共有来自 20多个国家和地区的60多名外宾和60多名国内专家参会。
- ▶ 9月12-17日,周晓农副所长赴英国参加"百年热带医学,迎接千年发展目标会议"。
- ▶ 9月14-27日,我所分别在甘肃兰州市和新疆喀什市组织举办两期"全国黑热病防治技术培训班"。
- ▶ 9月18日,中国疾控中心党委常委会议研究决定:聘任潘嘉云同志为寄生虫病所副所 长。聘任曹建平同志为寄生虫病所副所长,试用期一年。
- 9月22-25日,卫生部血咨委在安徽芜湖组织举办"2007年全国血吸虫病监测病原学诊断方法技术考核竞赛"。
- ▶ 9月24日,本所举办为期一个月的"专业寄生虫学与专业英语班",14名研究生和新职工参加了培训。
- ▶ 9月24-28日,我所专家陪同 WHO 专家对广西丝虫病残存疫点扩大调查工作进行现场督导。
- ▶ 9月27日,本所建立了我国重要寄生虫种质资源保种工作数据库。
- ▶ 9月27日,《中国寄生虫学与寄生虫病杂志》获中华预防医学会 2005-2006 年度优秀 期刊一等奖。
- ▶ 9月29日,受卫生部委托,在上海召开"《血吸虫病防治条例》后评估工作研讨会"。
- ▶ 10月10-13日,我所配合中国 CDC 在江西鹰潭市召开了"全国寄生虫病综合防治示范 区工作经验交流会",总结归纳了一年来示范区工作成绩与经验,分析了存在的问题 和薄弱环节,探讨了下一步工作。
- ▶ 10月10-15日,我所配合中国 CDC 在江西鹰潭市举办"全国土源性线虫病防治暨监测培训班",同时举办了"16岁以下儿童蛔虫感染率监测技术培训班"。
- ▶ 10 月 10-16 日,受卫生部疾控局委托,我所在四川省都江堰市举办了"山丘型血吸虫

病防治策略培训班"。

- 10月15-19日,在山东济南举办"全国钉螺控制技术暨灭螺新技术推广培训班"及"钉螺控制相关培训教材及课件专家终审会"。
- 10月15-20日,我所专家参加了长江水利委员会组织的对安徽省青弋江芜湖段、宣城 段等水利血防工程的现场论证。
- 10月17日,商务部委托,我所承办的"发展中国家疟疾、血吸虫病防治培训班"在沪 开班,来自25个国家、49名学员参加培训。
- ▶ 10月19日,组织本所开展实验室应急演练活动。
- 10月24-26日,为探索防治新技术,提升示范区技术含量,我所在上海召开"全国寄 生虫病综合防治示范区防治对策研讨会"。
- ▶ 10月25日,由本所、中华预防医学会寄生虫分会和上海市寄生虫分会共同举办的"热带病研究方向研讨会"在本所召开,TDR主任 Robert Ridley 博士、汤林华所长出席会议并分别作了"TDR 今后 10年的新策略与工作重点"和"中国寄生虫病流行现状"的报告。
- 10月28-31日,我所组织专家在海南省琼海市召开"疟疾监测方案修订研讨会",对《疟疾监测方案(试行)》进行修订。
- ▶ 10月29日,举办以"我爱我所"为主题的摄影比赛。
- 10月17日-11月5日,由我所承办的"发展中国家疟疾、血吸虫病防治研修班"在上海举行,来自非洲、亚洲、南美洲等25个国家49名学员参加培训。
- 11 月 5-27 日,赴湖南安乡、湖北汉川、江西进贤、安徽贵池,对即将结束驻点的人员进行现场考核。
- ▶ 11 月 12-14 日,卫生部召开"重点实验室评估总结会",挂靠在我所的卫生部寄生虫病原 与媒介生物学重点实验室在 50 个重点实验室的评估中名列第 5。
- ▶ 11月15-16日,我所有关专家参加了商务部举办的援非出征仪式。
- ▶ 11月20日,《嗜人按蚊地区疟疾流行潜势及控制暴发流行的研究》获中华预防医学科

技二等奖、中华医学科技二等奖;《生态环境变化对血吸虫病流行态势的影响及干预 措施研究》获中华预防医学科技二等奖、中华医学科技三等奖。

- 11月27日,我所在湖南省张家界召开"《丝虫病防治处理原则》与《丝虫病监测方案》 研讨会议",讨论制定丝虫病防治处理原则和丝虫病监测方案。
- ▶ 12月4-8日,周晓农研究员赴菲律宾参加"WHO西太平洋地区传染病和被忽视热带病 非正式磋商会议"。
- ▶ 12月11日,我所为即将参加援非任务的汪俊云研究员举行欢送仪式。
- 12月12-14日,"全国寄生虫病标准委员会 2007年工作会议"在海南召开,对血吸虫病、疟疾、包虫病、丝虫病防治与处理原则等7个寄生虫病标准进行审定。
- 12月17-20日,我所在上海举办"寄生虫病综合防治示范区综合防治对策培训班",对示范区改水改则及健康教育等综合防治措施开展培训和研讨。
- 12月20日,"卫生部寄生虫病原与媒介生物学重点实验室第三届学术委员会第三次会议"在我所召开。
- 12日21-23日,"卫生部寄生虫病专家咨询委员会2007年工作会议"、"中华预防医学会医学寄生虫分会2007工作会议"、"《中国寄生虫学与寄生虫病杂志》和《国际医学寄生虫病杂志》编委会工作会议"在上海召开。
§ 8. IMPORTANT EVENTS OF 2007

- January 9-12: At the request of Department of Disease Control MOH, 5 groups were organized to make secret inquiries atendemic areas of Schistosomiasis in Hubei, Hunan, Jiangxi and Jiangsu. The report and summary meeting was held in Jan.16.
- January 14: Evaluated by IPD's civilization construction leading group, agreed by Party committee, 6 departments including schistosomiasis department were awarded 2006 civilization departments.
- January 15: Korean Peninsula Malaria Seminar was held, and 16 officials including those from Republic of Korea, DPRK, West Pacific District and Southeast Asia District of WHO attended the sencina.
- January 16-18: International Malaria Conference was held, and 43 officials including those from Philippine, Thailand, Cambodia, Indonesia, Republic of Korea, DPRK, China, Japan, West Pacific District and Southeast Asia District of WHO attended the conference.
- January 22-23: Work Conference 2007 was held, on which Director Tang Lin-hua reported "Administrative task summary in 2006" and "Key work plan in 2007". Wang Yu, the Chairman of China CDC, Yang Wei-zhong, the vice chairman of China CDC and the director of relative department attended the conference. The civilization departments and outstanding people in 2006 were honored on the conference, and the leading group of IPD gave reports about their performance of duties which were evaluated democratically. Appraised by the academic committee, 5 projects and 6 topics were rewarded.
- January 22, 24: The 9th session of the 4th employee representative conference was held, on which representative employees listened to the director's report, discussed it and evaluated the leading group in a democratic atmosphere.
- January 26: Fund of 2006 for the Young and Middle-aged was approved to support three subsidizing projects.
- February 1-16: Sending warm activity was performed. Party and administrative officials and People in charge of Labour Union, Communist Youth League and functional departments visited 38 retired leaders, experts and old comrades with illness and hardship.

- February 2: Director Tang Lin-hua and Vice Director Zhou Xiao-nong went to Nanchang to attend Work Conference on Collaborative Provention and Control of schistosomiasis in the Lake District of five provinces.
- February 7: Group of "Study on Malaria Epidemic Potential and Prevention of Epidemic Outbreak in *Anopheles anthropophagus* distribution areas" was honoured of 2005-2006 "Red Banner civilized post" by Shanghai hygiene system.
- February 8: Zhou Xiao-nong was awarded as excellent Discipline Inspecting Cadre of Party Committee of Shanghai Municipal Science, Technology and Education System.
- February 10: The united work conference was held by Department of Disease Control MOH, China CDC and IPD, on which the key points of prevention and treatment on parasitic diseases in 2007 were discussed.
- February 13: All the staff attended the activity celebrating Spring Festival of 2007 in Dazhong international Conference Hotel in Sheshan.
- March 5-29: At the request of higher authority, several professional technologist were selected and sent to contact spots of Schistosomiasis Control and Prevention in Anxiang (Hunan), Hanchuan (Hubei), Guichi (Anhui) and Jinxian (Jiangxi) to provide technical support and practice at a temporary position.
- March 7: The project of "Pharmacological and Pharmacodynamic Study on New Broad-spectrum Insecticide 9901" was approved by Shanghai Science and Technology Commission.
- March 8-13: A training course on "application of Arcgis /Erdas/PCI softwears in prevention and control of parasitic diseases" was held.
- ➢ March 15: Director Tang lin-hua went to Suzhou to attend 8th chairman of WHO cooperating center conference.
- March 16-18: "Manuscripts Meeting of Teaching Material For Personnel Supporting Africa to Prevent Malaria", "Seminar for Propaganda Scheme of 'Schistosomiasis Prevention Rules'" and "Seminar for Echinococciasis Prevention Technology Scheme" were held in Shanghai by the Ministry of Health and IPD.

- March 20: Chen Zhi-rong, Party Committee Secretary and Director-General of Shanghai Municipal Health Bureau, visited IPD with related departments leaders for investigation and study.
- March 20: Both Sheng Hui-feng (vice director of Information Center) and Zhang Yi (vice director of vector control department) passed the evaluation during probation period and assumed the former positions.
- March 25-30: "National Training Course on Prevention and Treatment of Echinococcosis" was held in Xi'ning, Qinghai by the Ministry of Health and IPD.
- March 30: IPD was awarded "Shanghai Safe Unit" by Shanghai Social Security comprehensive Management Committee.
- April 3: Zhou Xiao-nong, the chairman of Secrets Committee of IPD, signed the responsibility documents of secrecy maintenance with all the directors of departments.
- April 4: Work meeting of IPD party committee in 2007 was held. Cai Ji-hong, secretary of party committee and Zhou Xiao-nong, secretary of commission for discipline inspection respectively summarized the work in 2006 and arranged the work in 2007.
- April 5: Zhou Shui-sen as director of department of malaria, Wu Wei-ping as director of department of filariasis, leishmaniasis and echinococcosis, Hu Wei as vice-director of parasite pathogen and vector biology key laboratory, Cheng Jia-xu was appointed as vice-director of health education, consultation and diagnosis center, Zhang You-mei as the deputy chief of division of science and technology affairs and Sun Hua-rong as security section chief of division of human resource and security passed the evaluation during probation period and assumed the former positions..
- April 9-12: "The Annual Summary Meeting of Schistosomiasis Monitoring Sites, 2006" and "The Annual Schistosomiasis Prevention and Control and Health Education Meeting" were held by IPD in Nanjin, Jiangsu, on which monitor work in 2006 was summarized, and outstanding monitoring sites were awarded certificates of merit.
- April 11: Leaders of Shanghai Education Commission, Shanghai Employment Guidance Centre, Shanghai Health Bureau Human Resource department, China CDC Human Resource Department and Education and Training Department came to IPD, investigated and studied the situation of employment and application of registered permanent residence

in Shanghai of graduates from IPD and reached a consensus on related problems.

- April 12-14: Director Tang Lin-hua attended "Seminar on Collaborative Provention and Control of Malaria of Five Provinces" in Luoyang, He'nan.
- April 13: Directors of IPD signed "IPD responsibility document of promise of honesty and diligence" with leaders of departments separately.
- April 17-20: Professor Tang Lin-hua went to Swiss to attend "Consultation of WHO Strategy and Technology of Neglected Tropical Diseases" and "International Neglected Tropical Disease Partner Conference".
- April 20: Evaluation of Key Laboratory of Parasite and Vector Biology, the Ministry of Health was completed.
- April 23-29: The one-week laboratory safety activity was performed in IPD.
- April 23-24: The exhibition of "in Memory of Professor Mao Shou-bai, spreading virtue of diligence preciseness and devotion" was held. "The 15th anniversary of Mao Shou-bai's Death and Bronze Statue Unveiling Ceremony" was held in Fushou Garden, Qingpu District, on which Yang Wei-zhong, vice director of China CDC, gave a speech and unveiled the bronze statue with Li Zhong-yao, Deputy Party Committee Secretary of Shanghai Municipal Health Bureau.
- May 16-19: A training course about taking care of chronic filariasis patients in community was held by IPD in Wuxi, Jiangsu.
- May 18: "National Conference for Intermediate Stage Appraisal of Diagnosis Reagents used in Schistosomiasis Monitoring Sites" was held in Wuhu, Anhui to appraise the quality of those diagnosis reagents.
- May 18: A group of 8 experts from World Foundation Project Management in Vietnam National Malaria, Parasite, Insect Institute visited IPD.
- May 18-23: The training course for chairmen of national schistosomiasis prevention offices and directors of prevention stations in schistosomiasis epidemic provinces and cities was held in Maanshan (Anhui province) with the Ministry of Health, on which the leaders of all levels of the schistosomiasis prevention administrative and professional institutions were

trained with job specification of anti-schistosomiasis institutions, diagnosis standards and so on.

- May 21: The experts of IPD went to Changsha (Hunan Province) to attend the Kick-off Meeting for Propaganda of "Schistosomiasis Prevention Rules" held by the Ministry of Health. As important members of propaganda group, Vice-director Zhou Xiao-nong and other experts joined the following propaganda activities.
- May 22-25: Expert Revision Meeting of Malaria Monitoring Scheme was held in Xiamen, Fujian province, in order to revise and perfect it.
- May 27-30: Five professors from U. S George Washington University came to visit our institute and discussed with us about the cooperation of Project of Human Hookworm Vaccine Screening.
- May 28-30: The training course on "Technical Program of Malaria Prevention and Treatment" was held with the Minister of Health in Nanning, Guangxi province, on which the professional personnel on malaria prevention from different provinces were trained with technical program, contingency plan, diagnosis standards and so on.
- May 30- June 20: Professors of IPD took part in the activity of supervision and investigation of echinococcus prevention and treatment in Ganzi, Sichuan Province, organized by NPC and the Ministry of Health.
- > June 1-30: The activity of "Rules and Regulations Propaganda Month" was held.
- June 10-14: "Symposium on the Draft of Anti-Schistosomiasis Healthy Education Evaluation Test Question Base and Examination Scenario" was held by IPD in Anxiang, Hunan Province, on which the Schistosomiasis Healthy Education Evaluation Test Question Base was standardized and unified and the examination scenario of schistosomiasis prevention health education pilot work was formulated.
- June 12-29: The training course of "Prevention of Infection Diseases in African Countries" was held, and 39 officials from 22 African countries attended.
- > June 18: An expert team was selected and sent to support malaria station in LinZhi, Tibet.
- ▶ June 26-28: "Annual Conference of National Malaria Monitoring Work, 2007" was held in

Hang Zhou, on which malaria monitoring work in 2006 was summarized and the work in 2007 was arranged.

- July 2: At the request of the Ministry of Health, we held the final review meeting on "the Present Situation of Important Human Parasitic Diseases Investigation Report" in Shanghai, on which the experts collated and finalize the national reports about 12 disease types and summary reports from 31 provinces.
- July 3-6: The expects were selected and sent by schistosomiasis expects consulting commission of the Ministry of health to carry out a scene investigation on preparative work of standards assessment for schistosomiasis prevention in Sichuan Province and strategy of schistosomiasis prevention and treatment in mountain districts.
- July 9: The Photography Exhibition "Such a Wonderful Landscape" was held by labor union of IPD.
- July 11: Sixteen people including Wu Wei-ping were listed as cultivation objects of high-level talented people, scarce talented people and outstanding young talented people of IPD in 2006-2007.
- July 12-13: "Work Meeting of Prevention and Treatment on parasitic diseases in the First Half Year of 2007" was held, on which the work of prevention and treatment on parasitic diseases was summarized in the first half of the year and work plan and budget implementation plan in the second half year were arranged.
- July 16-20: The leaders of Party Committee, administration and Labor Union visited retired veteran cadres and professors and sent something cool to over 20 retired workers.
- July 20: The experts of malaria prevention went to Tibet and they were divided into two groups to investigate Malaria intermediaries in Chayu and Motuo respectively.
- July 24: Three experts on malaria prevention went to Anhui to provide technical support to local station for 2 months.
- July 30-August 3: The training course of "National Investigation on vectors of parasitic diseases" was held in Zhengzhou Henan Province by IPD.
- August 1-2: At a request of Department of Disease Control MOH, we organized experts to

hold "Meeting of materials preparation for Press Conference of National Report on filariasis Elimination" in Shanghai, on which the PPT slides of the National Report were discussed.

- August 3-6: The editing conference of Materials Compilation of "National Important Human Parasitic Diseases Investigation" was held in Wuxi, Jiangsu Province, on which "National Important Human Parasitic Diseases Investigation" was compiled and typeset for the last time before publication.
- August 13-18: "Work Meeting of Schistosomiasis Monitoring Spot" and "Training Course of Snails investigation by GPS system" were held by IPD in Shexian, Anhui Province.
- August 18-21: At a request of Department of Disease Control MOH, experts were organized and sent to survey and make secret inquiries on the implementation and quality of schistosomiasis comprehensive treatment measures which mainly aimed at controlling the source of infection.
- August 21-22: The Kick-off Meeting for "Estimation of Nationwide Schistosomiasis Patients and Pre-evaluation of Reaching Standard of Epidemic Situation" was held in Shanghai.
- August 22-23: Seminar on "Application Strategy of Schistosomiasis Testing Reagent" was held in Shanghai by SAC of the Ministry of Health.
- August 24: CCTV, Xinhua news agency, Guangming Daily and Health News, Which were organized by information office of the Ministry of Health, came to IPD and interviewed about the strategy of filariasis prevention, science research and impressive deeds of veteran experts in the process of elimination of filariasis in our country.
- August 27-28: The conference for exchanging experiences of echinococciasis prevention project was held by IPD cooperating with MOH in Chengdu, Sichuan Province.
- August 30-31: The seminar of monitoring scenario and strategy after elimination of filariasis in our country was held in Shanghai by IPD cooperating with MOH.
- September 1-4: WHO experts went to Jiangxi and Yunnan province to carry out scene investigations on schistosomiasis prevention accompanied by the experts of IPD

- September 2-6: Director Tang Lin-hua went to Thailand to attend the meeting of monitoring malaria resistance in Mekong River region.
- September 3-6: WHO/TDR schistosomiasis diagnosis work conference was held in Lijiang, Yunnan Province by IPD associated with WHO.
- September 4-10: "the 7th Work Conference of Asian Schistosomiasis and Important Helminthiasis Net with Parasitosis Burden Evaluation Training Course" and "the 1st International Academic Meeting on Geospatial Hygienics" were held in Lijiang, Yunnan Province. Over 60 experts from more than 20 countries and districts and more than 60 domestic experts attended the meetings.
- September 12-17: Vice director Zhou Xiao-nong went to Britain to attend Conference of Celebrating Century Anniversary of Tropical Medicine and Welcoming the Objective of Millennial Development.
- September 14-27: Two sessions of National kala-azar prevention technology training course were held separately in LanZhou, Gansu Province and Kashen, Xinjiang Province.
- September 18: It was decided by China CDC Party committee standing committee meeting that employ Pan Jia-yun and Cao Jian-ping were appointed as vice-directors of IPD and the probation period is 1 year.
- September 22-25: "National Schistosomiasis Monitoring Spot Etiologic Diagnosis Skills Competition in 2007" was held in Wuhu, Anhui Province by SAC of the Ministry of Health.
- September 24: A one-month training course of parasitology and Specialized English was held and 14 post-graduate students and newcomers attended the course.
- September 24-28: WHO experts went to Guanxi Province to carry out the scene supervision of investigation in the expanded area of residual filariasis epidemic spots accompanied by experts of IPD.
- September 27: The conservation database was established.
- September 27: "Chinese Journal of Parasitology and Parasitic Diseases" won the first prize of excellent periodicals in 2006-2007 which was awarded by CPMA.

- Septmber 29: At a request of the Ministry of Health, post-evaluation of "schistosomiasis rules" seminar was held in Shanghai.
- October 10-13: Experience Exchange Meeting of Comprehensive Prevention and Treatment on parasitic diseases in National Demonstration Plot was held in Yingtan, Jiangxi province, on which the results and experiences of work were summarized, problems and weak points were analyzed and the further work was discussed.
- October 10-15: National nemathelminthiasis prevention and monitoring training course was held in Yingtan, Jiangxi Province, and skills of monitoring ascarid infection rate in children under 16 training course was held at the same time.
- October 10-16: At a request of Department of Disease Control MOH, hilly-type schistosomiasis prevention and treatment strategy training course was held by IPD in Dujiangyan, Sichuan Province.
- October 15-19: "National skills of snails control and populization of new snail-killing skills training course" and "the final review meeting of snail control training materials and courseware" were held in Jinan, Shandong.
- October 15-20: The experts of IPD attended the scene demonstration of hydraulic engineering and schistosomiasis prevention project in Wu Hu region and Xuan cheng region of Qing Yi River, which was organized by Yangtze River Hydraulic Committee.
- October 17: At a request of department of commerce, "Malaria and Schistosomiasis Prevention in Developing Countries Training Course" was held by IPD in Shanghai, and 49 trainees from 25 countries attended the course.
- > October 19: The emergency drilling in laboratories was organized in IPD.
- October 24-26: In order to explore new technology of prevention and promote the technical content of demonstration plots, seminar of national of prevention on parasitic diseases strategy in demonstration plots was held by IPD in Shanghai.
- October 25: Research Direction of Tropical Disease Seminar, which was organized by IPD, parasitic department of CPSA and Shanghai Parasitic association, was held in IPD. Robert Ridley, chairman of TDR and director Tang Lin-hua attended the seminar and gave reports separately on "New Strategy and Work Emphases of TDR in the Following 10 Years" and

"Present Epidemic Situation of Parasitosis in China".

- October 28-31: Revision of Malaria Monitoring Scenario Seminar was held by IPD in Qionghai, Hainan Province, on which "Malaria Monitoring Scenario (Trial Implementation)" was revised.
- Control Contro
- October 17-November 5: "Malaria and Schistosomiasis Prevention in Developing Countries Training Course" was held by IPD in Shanghai, and 49 trainees from 25 countries of Africa, Asia and South America attended the course.
- November 5-27: Some people of IPD went to Anxiang (Hunan province), Hanchuan (Hubei province), Jinxian (Jiangxi Province), Guichi (Anhui Province) to carry out scene examinations of the experts who would soon finish local support.
- November 12-14: "Summary Meeting of Evaluation of Key Laboratory" was held by the Ministry of Health. Key Laboratory of Parasite and Vector Biology, MOH which was set in IPD, ranked 5th in the evaluation of 50 key laboratories.
- November 15-16: The experts of IPD attended the Embarking Ceremony of Supporting Africa held by the Ministry of Commerce.
- November 20: "Study on Malaria Epidemic Potential and Prevention of Epidemic Outbreak in Anopheles anthropophagus distribution areas" was awarded the second prize of the Chinese Medical Sciences and Technology and the second prize of the Chinese Association of Prevention Medicine Sciences and Technology. "Study on the Impact of Ecological Environment Changes on Epidemic Condition of Schistosomiasis and Intervention Measures" was awarded the third prize of the Chinese Medical Sciences and Technology and the second prize of the Chinese Association of Prevention Medicine Sciences and Technology.
- November 27: Seminar on "Filariasis Prevention and Treatment Principals" and "Filariasis Monitoring Scenario" was held in Zhangjiajie, Hunan Province to discuss filariasis prevention and treatment principals and monitoring scenario.
- December 4-8: Professor Zhou Xiao-nong went to Philippine to attend Informal Consultation Conference of Infections Diseases and Neglected Tropical Disease in West

Pacific Region, WHO..

- December 11: Farewell party was held in IPD for Professor Wang Jun-yun who went to support Africa.
- December 12-14: "National Parasitosis Standard Committee Work Meeting, 2007" was held in Hainan, on which prevention and treatment principles for 7 kinds of parasitosis including filariasis, echinococciasis, malaria and schistosomiasis were examined and approved.
- December 17-20: Parasitosis prevention strategy in demonstration plots training course was held by IPD in Shanghai, on which the comprehensive prevention and treatment such as reconstruction of water supplement system and drainage system and health education in demonstration plot were discussed and trained.
- December 20: "The 3rd Session of the 3rd Academic Committee Conference on Key Laboratory of Parasite and Vector Biology, the Ministry of Health" was held in IPD.
- December 21-23: "MOH Parasitosis Experts Advisory Committee Work Conference, 2007", "CPMA Parasite Committee Work Conference, 2007", "Editorial Work Conference of 'Chinese Journal of Parasitology and Parasitic Diseases' and 'International Journal of Medical Parasitic Diseases'" were held in Shanghai.

§9.先进事迹介绍

中国青年女科学家奖获得者

————胡薇同志的事迹

胡薇同志是中国疾病预防控制中心寄生虫病预防控制所病原与媒介生物学重点实验 室副主任、研究员。她在该所读博期间和获得博士学位后,全心投入了日本血吸虫基因组、 转录组和蛋白质组的研究及应用,在多学科的合作团队中发挥了主要技术骨干的作用。她具 有"献身、创新、求实、协作"的开拓进取精神,应用基因组学、生物信息学、分子生物学、 免疫学和细胞生物学等的前沿技术,开展血吸虫病诊断、疫苗和药物候选靶点分子的研究, 取得了突破性研究进展,为创新血吸虫病防治技术作出了贡献。为表彰她在科研工作中的 出色表现及卓越贡献,中华全国妇女联合会、中国科学技术协会、中国联合国教科文组织 全国委员会和欧莱雅中国,经全国评选,于 2007 年 12 月在钓鱼台国宾馆给她颁发了中国 青年女科学家奖。

血吸虫病是一种严重危害人体健康的寄生虫病,在我国的致病虫种是日本血吸虫,人、 畜通过接触疫水而感染,分布于江滩、湖滩和山区。我国曾经是日本血吸虫病流行最严重 的国家之一。半个世纪以来,在党和政府的领导和关怀下,血吸虫病防治工作已取得了举 世瞩目的成就,历史上"千村薜荔人遗矢,万户萧疏鬼唱歌"的惨景已换新貌。我国广大卫 生及科技工作者为此做出了巨大的贡献,取得了很多科技成果。然而,由于复杂的血吸虫 生活史和传播特点,在未控制的流行地区,传播依然存在,是我国重点防治的寄生虫病之 一。因此,消除血吸虫病仍是一项十分艰巨而长期的任务。

党和国家领导高度重视控制血吸虫病的工作,提出了"要抓住源头,综合治理,依靠 科技进步,坚决遏制血吸虫病疫情回升势头"的要求,采取了强有力的控制措施。为了推 动科学防治,早日实现消除血吸虫病的目标,国家设立了重大科研专项,其中,日本血吸虫 基因组和基因功能研究是一项重要内容。 胡薇在这一重大的合作研究计划中发挥了技术 骨干作用。同时,胡薇同志勇于面向挑战,敢于攀登,作为课题负责人先后承担 2 项国家 自然科学基金项目、1 项国际合作项目和 1 项上海市科技发展基金项目,作为主要承担人 或项目骨干参加了"863"重大专项、"863"面上项目、"973"国际科技合作重点项目、国家科 技基础条件平台项目等 8 项国家、省(市)以及国际合作课题;胡薇和国家人类基因组南 方研究中心的合作团队共同拼博在世界上第一次对日本血吸虫进行了大规模表达基因序 列测定和蛋白质组研究,并作全面分析和验证。建立了世界上最大的日本血吸虫表达序列 标签(EST)公共数据库。通过数据共享,其研究成果将对认识血吸虫生物学特点、理解宿 主与寄生虫的相互关系、拓宽分子寄生虫学和分子进化等研究领域做出重要贡献;将为实 现我国控制和消除血吸虫病的战略目标提供前所未有的生物信息资源和分析技术平台;也 必将有助于推动国内外同行对血吸虫病及其它人体寄生虫病的科学研究和防治技术创新。 以该基因组工作为支撑的重要功能基因发掘以及应用于免疫诊断、预防疫苗和新药靶点等

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的研究正在同步进行。这也是我国作为一个发展中国家为维护人类健康所做出的新的努力和探索。

胡薇的研究成果先后发表在 Nature Genetics 及 PLoS Pathogens 等国际著名杂志。已 发表论文 20 余篇,其中 SCI 收录 8 篇,第一作者或通讯作者文章总影响因子 48 以上,被 引用 120 余次。已参与共同申请专利 25 项,已公开 24 项,其中第一发明人 3 项。

近年来, 胡薇获得了 2004 年上海市科技进步二等奖, 上海市青年科技启明星奖、2005 年全国优秀博士学位论文奖等多项奖励和荣誉称号, 并两次评为该所的优秀共产党员。

胡薇同志对工作执着追求,有着坚强的毅力。当博士论文研究紧张阶段,她正怀身孕, 每天从市区挤地铁赶到张江国家人类基因组南方研究中心做实验,经常一做就到深夜,孩 子出生了,可她更关心着她的实验,刚满月又投入到工作中。有时一坐下就熟睡了,她太 疲劳了,看着她娇小的身影,清秀疲惫的面容,不难想像出她付出了多少艰辛,然而她总 是带着灿烂的微笑,信心百倍地工作,工作。

胡薇同志积极上进,总是以高标准来要求自己,磨练自己。还在高中读书时期,由于体质比较柔弱,她就每天清晨早起练习长跑,从不间断,后来多次在中学和大学的运动会上获得 1500 米长跑冠军。老师和同学都非常敬佩她坚忍不拔的毅力。在就读大学和博士期间,多次被评为优秀学生干部,优秀团员,优秀毕业生、优秀共产党员。

胡薇同志有较强的党性,她担任第二党支部书记,所党委委员、纪委委员。为人谦和、 真诚、正直,她关心同志,尊重师长,有良好的团队合作精神。她善解人意,同志们有困 难总是愿意向她倾谈。她带领支部党员发挥先锋模范作用,在科研工作中做出贡献,她负 责的党支部获上海市卫生系统 2006 年先进党支部。

胡薇一路走来,体现了她的工作信念"坚持不懈,必有所得",她碰到过难关,也遇到 过坎坷,但决不气馁,契而不舍。另一方面,她的成长和成功的历程也凝聚了培养和关爱她 的所在单位中国疾病预防控制中心寄生虫病预防控制所、她的师长以及与她共同拼博的团 队的心血。她得奖时正在美国做短期合作研究,当她得知荣获中国青年女科学家奖时,她 说"这一殊荣是属于大家的,沒有单位、导师和团队,我不可能有今天"。

胡薇不仅是一位出色的学者,而且也是一位可亲能爱的年青女性。这些年来她离不开 非常爱她的丈夫和全家所给予她的支持和力量。她也爱他们,是一位好妻子,是她聪明可 爱的儿子的好母亲,也是一位孝顺的女儿和媳妇。

§9. INTRODUCTION OF ADVANCED DEEDS

China's youth women scientists Prize winner

-----The advanced deeds of Hu Wei

Hu Wei, Professor Investigator, is vice-chair of parasite pathogen and vector biology key laboratory of IPD ,CDC. From the time she specialized in PhD degree, she has already taken whole heart into research and application of *Schistosoma japonicum* genome, transcription and proteome, and she played a major role in the technology backbone of teamwork in variety of science. She has a "dedication, innovation, pragmatism and cooperation" pioneering spirit, and with application of advanced technology of genomics, bioinformatics, molecular biology, immunology and cell biology, she developed the research in Schistosomiasis diagnostic, vaccine and drug candidates target molecules and finally made a breakthrough progress which is contributed to the innovation of Schistosomiasis Control. In recognition of her outstanding performance and contributions for her research, China Women's Federation, China Science and Technology Federation, China National Commission for UNESCO and L'Oreal China, after national selecting, she was awarded to young female scientists Award in December 2007 at the Diaoyutai State Guesthouse.

Schistosomiasis is a high risk parasitic diseases for health, distributed in the marshland and mountain. In China Schistosomiasis is caused by the pest species *Schistosoma japonica*. Livestock and people were infected by contacting with infected water. China once was one of the most serious epidemic countries of schistosomiasis. For half a century, under the leadership and care of the party and the government, prevention and treatment of schistosomiasis has made noteworthy achievements, history "hundreds of dying villagers shitting, thousands of depressing ghosts singing" has totally changed. The success is due to the tremendous contribution and many scientific and technological achievements which made by the vast number of Chinese health, science and technology workers. However, because of the complicated characteristics of schistosome life cycle and dissemination, in the uncontrolled areas of epidemic disease, spread still exists. Schistosomiasis is one of the focal point of China's prevention and treatment of parasitic diseases. Therefore, the elimination of schistosomiasis is a very arduous and long-term task.

The party and state leadership pay great attention to the work of controlling schistosomiasis, purpose to "seizing the source, with integrated control, by using scientific and technological progress, to firmly curb the new outbreak of schistosomiasis," and take a strong control measures. In order to promote scientific prevention and achieve the goal of schistosomiasis elimination, the country have set up a major scientific research projects, and *Schistosoma*

japonicum genome and gene function research is important one. Hu Wei played an important role in technology in this major research project in cooperation. At the same time, it is courageous for her to face challenges and difficulties. As a responsible person, she has taken charge of two project of National Natural Science Foundation, a project of international cooperation and a project of Shanghai Science and Technology Development Fund. She also worked as a major commitment to the project or participate in the backbone the "863" projects, the "863" surface projects, "973" focus on international science and technology cooperation project, the state science and technology projects, basic conditions platform eight countries, provinces (municipalities), as well as issues of international cooperation. Hu Wei worked with the National Human Genome Research Center of the South cooperation team and made research of Schistosoma japonicum gene expression and protein for the first time in the world on such a large scale, and developed a comprehensive analysis and validation. They established the world's largest Schistosoma japonicum expressed sequence tag (EST) public database. Through data sharing, the fruits of their research recognize Schistosoma biological characteristics of the host and parasite, understand the relationship between the molecular parasitology and broaden molecular evolution, and make an important contribution to the field of study. It provides an unprecedented biological information resources and analytical technology platform for the realization of China's schistosomiasis control and the elimination of strategic. It will also help promote domestic and foreign counterparts on the human schistosomiasis and other parasitic diseases control of scientific research and technological innovation. The genome work which one of the important support function of the gene used to explore immune diagnosis, prevention and vaccine research, such as new research of new drug targets are developed at the same time. This is new efforts and exploration which are made by China as a developing country to safeguard human health.

Hu Wei's research results have been published on the international famous magazine such as the Nature Genetics and PLoS Pathogens. More than 20 papers have been published, which eight of them was recorded by SCI. the impact factor of the first author of the article or communication was over 48, and they were quoted more than 120 times. She has been involved in 25 patent applications, 24 of them have been made public, including working as the first inventors for three times.

In recent years, Hu Wei won a second prize in 2004 Shanghai scientific and technological progress, Shanghai Youth Qimingxing Technology Award, 2005 National Excellent Doctoral Thesis Award, etc. She was also awarded excellent Party members in our institute for twice.

Hu Wei has a persistently pursuit for work, have a strong willpower. When tensions doctoral thesis was on stage, she was just pregnant. Everyday she traveled from downtown to Zhangjiang National Human Genome Research Center of the South by crowded subway, and usually worked late into the midnight. Only one month after the child was born, she laid more emphasis on her experiments and concentrated to the work. Sometimes she can sleep as soon as

sit down, because she was too fatigue. Looking at her petite figure and tired face, it is not difficult for us to imagine how much hardship had she paid. But her face was always with a bright smile, brimming with confidence to work.

Hu Wei has a positive progress spirit, and always set a high standard to ask her own, temper her own. In the period of high-school, in order to improve her weak constitution, she began to get up early and do some running every morning uninterrupted. Later, she won first prize of 1,500 meters on sports meeting in secondary schools and universities for many times. Teachers and students have great admiration for her indomitable perseverance. And as a doctoral student in the University, she was awarded outstanding cadres, outstanding members, outstanding graduates, excellent party members.

Hu Wei has a strong CONSCIOUSNESS of party; she is the secretary of the second party branch, party members, and members of the Discipline Inspection Commission. She is modest, sincere and honest, and she concerns about comrades, respects teachers, and has a good team spirit. She was considerate, and the comrades who have difficulty are always willing to talk to her. She led the party branches play a vanguard and exemplary role in the research work. The party branches which she was responsible for was awarded 2006 Shanghai advanced party branches in the health system.

With the time pass by, her work faith "persistence and then success" was shown. She encountered the difficulties and bumpy, but she never discouraged. On the other hand, the growth and success of her is also attributed to nurture and care of her unit ——China Disease Prevention and Control Center by the parasitic disease prevention and control, as well as her teachers and her team. When she was informed that she won the Chinese youth female scientists prize, she happened to do short-term collaborative research in United States. She said: "this award belongs to everyone, and I can not get this price today without units, mentor and the team."

Hu wei is not only an outstanding scholar, but also an amiable young women. Over the years, she can not live without the love of her husband and the support and strength of her family. She also loves them. She is a good wife, a smart lovely mother, and also a filial daughter and daughter-in-law.



▲ 全国消除丝虫病后监测慢性丝虫病关怀照料技术培训和经验交流研讨会于2007年5月在无锡召开



▲卫生部寄生虫病专家咨询委员会2007年工作会议于12月23日在上海召开



