

## 苗栗縣泰安鄉山胞寄生蟲之調查研究

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## 摘 要

著者等曾于 1983 年 7—8 月間于苗栗縣泰安鄉泰安村採用 FEC 法共檢查了 242 名村民之新鮮糞便檢體，同時在本鄉之清安、泰興、泰安、清善、汶水、龍山和梅園等七所國小採用一次玻璃紙膠帶肛圍擦拭法和目視共檢查 254 名學童之蟯蟲和頭蝨，其結果摘錄如下：

在受檢之 242 名村民新鮮糞便中，其腸道寄生蟲之平均感染率為 72.3%。在各蟲種中，以鞭蟲 (43.8%) 為最高，其餘依次為蛔蟲 (26.4%)，鈎蟲 (20.7%)，中華肝吸蟲 (9.5%)，梨形鞭毛蟲 (5.0%)，大腸阿米巴 (4.5%)，衛氏肺吸蟲、糞線蟲、短小包膜條蟲、人球蟲各 2 例 (0.8%) 以及嗜碘阿米巴一例 (0.4%)。在 175 名陽性患者，其感染蟲種數為 1、2、3、4 及 5 種者各佔 54.9%，35.4%，8.0%，1.1% 及 0.6%。

在 7 所共 254 名山地學童中，其蟯蟲平均感染率為 9.1%，而女性 (14.3%) 高於男性 (4.4%)。在各校間，其感染率也有差異。在各年級間，分別為一年級 6.9%，二年級 14.7%，三年級 7.4%，四年級 10.4%，而五年級則為 8.3%。

在 7 所共 254 名山地學童中，其頭蝨平均感染率為 29.1%，而女性 (52.1%) 遠高於男性 (8.9%) 且在統計學上具有意義之差異 ( $P < 0.05$ )。在各校間，其感染率也不同。在各年級間，分別為一年級 37.9%，二年級 26.5%，三年級 29.6%，四年級 22.9% 而五年級則為 26.7%。

## 前 言

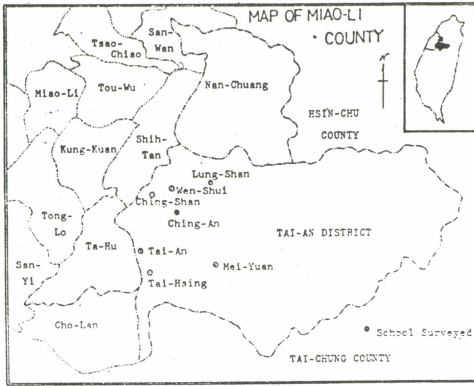
寄生蟲病頗流行於本省各山地部落，且有多位學者專家<sup>(1-9)</sup>提出報告，同時在本省苗栗縣各地亦有多篇調查報告<sup>(10-15)</sup>，並指出本地為中華肝吸蟲病高度流行區<sup>(15)</sup>。但分佈於本地泰安鄉之泰雅族與南庄鄉之賽夏族山地學童，其 Taeniasis 感染率遠低於相似地區之新竹縣五峯鄉<sup>(4, 14, 16)</sup>，同時亦無人提出有關本鄉國小學童之蟯蟲與頭蝨之調查報告。基於為瞭解本鄉之 Taeniasis 與中華肝吸蟲病及學童

之蟯蟲與頭蝨之流行狀況，特選本鄉之泰安村村民及七所國小學童做初步調查(如地圖所示)，其結果將可做為本研究室進一步研究及有關單位從事公共衛生行政與防治之參考。

## 材料與方法

## 1. 糞便檢查：

在泰安村之村鄰長協助下，連續 3 日，挨家共收集了 242 名村民之新鮮糞便，各取約 1 公克，置於附蓋小試管中，加入 10% Formalin，並予以充分混合固定，帶回研究室，採



用 Formalin-Ether-Concentration<sup>(17)</sup> 詳細鏡檢三片 (18 × 18 mm)，登記其結果。

2. 蟯蟲之檢查：

配合本鄉各校學童暑期返校日，于上午八點到十點間，前往各校，採用一次玻璃紙膠帶肛圍擦拭法<sup>(18)</sup> (A single perianal scotch adhesive tape swab method) 檢查

蟯蟲。

3. 頭蝨之檢查：

以肉眼檢查學童頭髮，若具有乳白色且未孵化之蝨卵或稚蟲或成蟲者，視為陽性。

上述各項檢查成績，一律按性別，年齡(年級)別，學校別……採用  $\chi^2$ -test 做統計學上比較，若其  $P \leq 0.05$  時，即被視為有意義之差異。

結果

1. 山胞腸道寄生蟲之感染率：(表 1)

在泰安村共檢查了 242 名山胞之糞便檢體，其結果為：一般平均感染率為 72.3%，而男性 72.7% 與女性 71.9% 相似。

按寄生蟲種別來分，蠕蟲類和原蟲類感染率分別為 69.8% 和 10.3%，其中以鞭蟲 43.8% 最高，其餘依次為蛔蟲 26.4%，鈎

Table 1. Incidence of Intestinal Parasites among Aborigines at Tai-An Village, Tai-An District, Miao-Li County

Sex	Male (%)	Female (%)	Total (%)	
No. of Exam.	121	121	242	$\chi^2$ -test
Sp. of Parasites				
A. lumbricoides	35	29	64 (26.4)	
T. trichiura	55	51	106 (43.8)	
Hook worms	20	30	50 (20.7)	
S. stercoralis	1	1	2 ( 0.8)	
C. sinensis*	13	10	23 ( 9.5)	
P. westermani	1	1	2 ( 0.8)	
H. nana	2	0	2 ( 0.8)	$p > 0.05$
Subtotal	85	84	169 (69.8)	
E. coli	8	3	11 ( 4.5)	
G. lamblia	6	6	12 ( 5.0)	
I. bütschlii	1	0	1 ( 0.4)	
Iso spora sp.	1	1	2 ( 0.8)	
Subtotal	15	10	25 (10.3)	
Total	88 (72.3)	87 (71.9)	175 (72.3)	

\*Adult: 19/72 (26.4%), J-M-S.: 3/121 (2.5%), P-S.: 1/49 (2.0%)

Table 2. Incidence of Intestinal Parasites among Aborigines at Tai-An Village, Tai-An District, Miao-Li County

Age	Adult		Junior-Mid School		Primary School		Total		X <sup>2</sup> -test
No. of Exam.	72		121		49		242		
Positive	No.	%	No.	%	No.	%	No.	%	
Sp. of Parasites									
A. lumbricoides	16	22.2	34	28.1	14	28.6	64	26.4	
T. trichiura	11	15.3	71	58.7	24	49.0	106	43.8	p<0.05
Hook worm	30	41.7	12	9.9	8	16.3	50	20.7	p<0.05
S. stercoralis	0	0	1	0.8	1	2.0	2	0.8	
C. sinensis	19	26.4	3	2.5	1	2.0	23	9.5	p<0.05
P. westermani	1	1.4	0	0	1	2.0	2	0.8	
H. nana	0	0	2	1.7	0	0	2	0.8	
Subtotal	49	68.1	86	71.1	34	69.4	169	69.8	
E. coli	3	4.2	6	5.0	2	4.1	11	4.5	
G. lamblia	2	2.8	2	1.7	8	16.3	12	5.0	
I. bütschlii	0	0	1	0.8	0	0	1	0.4	
Isospora sp.	2	2.8	0	0	0	0	2	0.8	
Subtotal	7	9.7	8	6.6	10	20.4	25	10.3	
Total	53	73.6	86	71.1	36	73.5	175	72.3	

蟲 20.7%，中華肝吸蟲 9.5%，梨形鞭毛蟲 5.0%，大腸阿米巴 4.5%，衛氏肺吸蟲、糞線蟲、短小包膜條蟲、人球蟲各 2 例（0.8%）及嗜碘阿米巴一例（0.4%）。

## 2. 感染率與年齡別之關係：（表 2）

除高中或高職學生利用暑期外出工作未檢查外，其餘按年齡別分為成人、國中和國小等三個年齡群，其平均感染率分別為成人組 73.6%（53 / 72），國中組 71.1%（86 / 121），國小組 73.5%（36 / 49），各年齡群間並無有意義之差異出現。但在鞭蟲之感染率，國中組（58.7%）和國小組（49.0%）顯然比成人組（15.3%）高得多，而鈎蟲和中華肝吸蟲中，成人組（41.7%，26.4%）比國中組（9.9%，2.5%）、國小組（16.3%，2.0%）高得多，並且在統計學上具有有意義之差異（ $P < 0.05$ ）。另外只有 2 名成人感染上球蟲病的出現。

## 3. 寄生蟲蟲種之百分率：（表 3）

在 175 名陽性患者中，其分別感染蟲種數為 1 種者佔 54.9%（96 / 175），2 種者 35.4%（62 / 175），3 種者 8.0%（14 / 175），4 種者二例 1.1%（As.Tt.Hk.Gl 和 As.Hk.Cs.Ec）而 5 種者 1 例 0.6%（Hk.Ss.Cs.Is.Ec）。

## 4. 泰安鄉國小學童蠕蟲之感染率：（表 4、表 5）

本鄉共有 7 所 254 名國小學童接受蠕蟲檢查，其平均感染率為 9.1%（23 / 254），而女性 14.3%（17 / 119）遠高於男性 4.4%（6 / 135），且在統計學上具有有意義之差異（ $P < 0.05$ ）。

在各校間，以汝水國小 20.0%（7 / 35）為最高，其餘依次為泰興 16.7%（2 / 12），清善 10.7%（6 / 56），泰安 7.9%（3 / 38），梅園 4.9%（2 / 41），清安 4.7



Table 3. Multiple Infection of Intestinal Parasites among 175 Cases

No. of Species	Species (No. of Infection)	Total	
		No.	%
1	Al(17), Tt(50), HK(17), Ss(1), Cs(5) Ec(2), Gl(3), Is(1)	96	54.9
2	Al,Tt(21), Al,HK(3), Al,Cs(1), Tt,HK(11) Tt,Cs(4), HK,Cs(8), Is,Cs(1), Tt,G1(2) Al,Gl(4), Al,Ec(2), Tt,Ec(4), Al,Hn(1)	62	35.4
3	Al,Tt,HK(7), Al,Tt,Cs(1), Al,Tt,Hn(1) Al,Tt,Gl(2), Al,Tt,Ec(1), Al,Tt,Pw(1) HK,Cs,Pw(1)	14	8.0
4	Al,Tt,HK,G1(1), Al,HK,Cs,Ec(1)	2	1.1
5	HK,Ss,Cs,Ib,Ec(1)	1	0.6

Al: *A. lumbricoides*  
Ss: *S. stercoralis*  
E.C.: *E. coli*

Tt: *T. trichiura*  
Cs: *C. sinensis*  
Gl: *G. lamblia*

HK: Hook worms  
Pw: *P. westermani*  
Ib: *I. bütschlii*

Hn: *H. nana*  
Is: *Isospora sp.*

Table 4. Incidence of *Enterobius vermicularis* Infection among Aboriginal Primary School Children in Tai-An District, Miao-Li County: by School

Primary School	Male	Female	Total	X <sup>2</sup> -test
Ching-An 清安	0 % (0/27)	12.5% (2/16)	4.7% (2/43)	
Tai-Hsing 泰興	0 % (0/6)	33.3% (2/6)	16.7% (2/12)	
Tai-An 泰安	5.3% (1/19)	10.5% (2/19)	7.9% (3/38)	
Ching-Shan 清善	8.0% (2/25)	12.9% (4/31)	10.7% (6/56)	p>0.05
Wen-Shui 汶水	16.7% (3/18)	23.5% (4/17)	20.0% (7/35)	
Lung-Shan 龍山	0 % (0/18)	9.1% (1/11)	3.4% (1/29)	
Mei-Yuan 梅園	0 % (0/22)	10.5% (2/19)	4.9% (2/41)	
Total	4.4% (6/135)	14.3% (17/119)	9.1% (23/254)	p<0.05
X <sup>2</sup> -test	p>0.05	p>0.05	p>0.05	



Table 5. Incidence of *Enterobius vermicularis* Infection among Aboriginal Primary School Children in Tai-An District, Miao-Li County: by Grade

Grade	Male	Female	Total	X <sup>2</sup> -test
I	4.4% (1/21)	8.1% (3/37)	6.9% (4/58)	p>0.05
II	9.1% (2/22)	25.0% (3/12)	14.7% (5/34)	p>0.05
III	0 % (0/33)	19.0% (4/21)	7.4% (4/54)	p<0.05
IV	7.4% (2/27)	14.3% (3/21)	10.4% (5/48)	p>0.05
V	3.1% (1/32)	14.3% (4/28)	8.3% (5/60)	p>0.05
Total	4.4% (6/135)	14.3% (17/119)	9.1% (23/254)	p<0.05
X <sup>2</sup> -test	p>0.05	p>0.05	p>0.05	

Table 6. Incidence of Head Louse Infection among Aboriginal Primary School Children in Tai-An District, Miao-Li County: by School

Primary School	Male	Female	Total	X <sup>2</sup> -test
Ching-An 清安	3.7% (1/27)	50.0% (8/16)	20.9% (9/43)	
Tai-Hsing 泰興	0 % (0/6)	66.7% (4/6)	33.3% (4/12)	
Tai-An 泰安	47.4% (9/19)	94.7% (18/19)	71.1% (27/38)	
Ching-Shan 清善	8.0% (2/25)	35.5% (11/31)	23.2% (13/56)	
Wen-Shui 汶水	0 % (0/18)	29.4% (5/17)	14.3% (5/35)	p<0.05
Lung-Shan 龍山	0 % (0/18)	45.5% (5/11)	17.2% (5/29)	
Mei-Yuan 梅園	0 % (0/22)	57.9% (11/19)	26.8% (11/41)	
Total	8.9% (12/135)	52.1% (62/119)	29.1% (74/254)	
X <sup>2</sup> -test	p<0.05	p>0.05	p<0.05	

% ( 2 / 43 ) 而以龍山 3.4 % ( 1 / 29 ) 爲最低。但各校間之男性間、女性間及全體間在統計學上均無有意義之差異出現 ( P > 0.05 )。

在各年級中，其感染率分別爲一年級 6.9 % ( 4 / 58 )，二年級 14.7 % ( 5 / 34 )，三

年級 7.4 % ( 4 / 54 )、四年級 10.4 % ( 5 / 48 )，而五年級爲 8.3 % ( 5 / 60 )。在各年級間，按男性間、女性間及全體間，在統計學上均無有意義之差異 ( P > 0.05 ) 出現，僅在三年級之男與女間具有意義之差異 ( P < 0.05 ) 出現。

Table 7. Incidence of Head Louse Infection among Aboriginal Primary School Children in Tai-An District, Miao-Li County: by Grade

Grade	Male	Female	Total	X <sup>2</sup> -test
I	9.5% (2/21)	54.1% (20/37)	37.9% (22/58)	p<0.05
II	9.1% (2/22)	58.3% (7/12)	26.5% (9/34)	
III	18.2% (6/33)	47.6% (10/21)	29.6% (16/54)	
IV	3.7% (1/27)	47.6% (10/21)	22.9% (11/48)	
V	3.1% (1/32)	53.6% (15/28)	26.7% (16/60)	
Total	8.9% (12/135)	52.1% (62/119)	29.1% (74/254)	
X <sup>2</sup> -test				p>0.05

Table 8. Comparison of the Incidence of *Enterobius* Infection between Tai-An and Nan-Chuang Districts among Aboriginal Primary School Children in Miao-Li County. July, 1983

District	No. of Exam	Positive		X <sup>2</sup> -test
		No.	%	
Tai-An	254	23	9.1	p<0.05
Nan-Chuang	379	76	20.1	
Total	633	99	15.6	

5. 泰安鄉國小學童頭蝨之感染率：(表6、表7)

在7所共254名學童中，其頭蝨平均感染率為29.1% (74/254)，而女性52.1% (62/119)遠高於男性8.9% (12/135)且在統計學上具有意義之差異 (P<0.05)。在各校中，以泰安國小71.1% (27/38)為最高，其餘依次為泰興33.3% (4/12)，梅園26.8% (11/41)，清善23.2% (13/56)，清安20.9% (9/43)，龍山17.2% (5/29)而以汶水14.3% (5/35)為最低。但在各校間之男性間和全體間在統計學上具有意義之差異 (P<0.05)，其中男性只有泰安47.4%，清善8.0%和清安3.7%發現有頭蝨感染，其餘則無。

在各年級間，分別為一年級37.9% (22/58)，二年級26.5% (9/34)，三年級29.6% (16/54)，四年級22.9% (11/48)而五年級為26.7% (16/60)，但在各年級間之男性間、女性間及全體間，均無有意義之差異出現 (P>0.05)。

討 論

自政府于1972年大力提倡寄生蟲病防治工作以來，全省各山地學校每學期都要檢查糞便一次。陽性者，除鞭蟲症者投給Vermox外，其餘一律投給Combantrin，每學期一次，比較1966年呂氏<sup>(14)</sup>報告與著者等在本鄉泰安村之學童主要寄生蟲感染率分別為蛔蟲 (84.8%，28.6%)，鞭蟲 (60.7%，49.0

%)，鈎蟲(51.8%，16.3%)，蟯蟲(44.4%，9.1%)，具有顯著地下降。但是其感染率仍然高居不下，這是因為投藥期間間隔太長，以及未能全校全面性一律投藥之故。故不妨仿照范等<sup>(6,7)</sup>在宜蘭縣大同鄉、南澳鄉之防治方式，選擇安全及廣效之驅蟲藥物，採用地毯式治療(Blanket treatment)，每隔2—3月投藥一次，相信其成績會更好，以達成防治的目的。

Taeniasis一向在台灣山地同胞之感染率頗高，尤其是泰雅族、雅美族<sup>(1, 3-8, 16, 19-27)</sup>。呂氏<sup>(14)</sup>報告學童感染率為0.2%，而這次調查成績均為陰性。究其原因，可能是本地山胞與平地籍同胞接觸較頻，生活方式與平地人相似，極少狩獵，更少生吃獵物之肝有關。

在台灣本地，寄生于人腸道之球蟲症(Isosporiosis)僅有數例報告<sup>(8)</sup>，這次在泰安村有2例(成人)出現，可能由於一般檢體在收集固定前時間拖得太長而被分解破壞，因此需要特別注意新鮮檢體應迅速貯於固定液內之必要，以提高其檢出率。

這次同時在南庄鄉東河與蓬萊兩所賽夏族山地國小採用一次玻璃紙膠帶肛圍擦拭法共檢查379名學童，其感染率為20.1%(如表8所示)，比泰安鄉高且在統計學上具有意義之差異( $P < 0.05$ )，這個顯示出入口愈密集，交通愈便利地方，其感染率愈高，而與陳等<sup>(28)</sup>、鍾等<sup>(29)</sup>之報告相類似。

七所國小學童頭蝨感染率平均為29.1%但泰安國小71.1%遠高於其它國小。而頭蝨最好之防治方法除了藥物治療外，就是勤於洗頭及除蝨。然而泰安部落離開河流等水源有一段距離，用水不太方便，不像其它部落緊臨溪邊，因此其感染率遠高於其它部落，且與安氏<sup>(30)</sup>相似。

中華肝吸蟲高度流行於本省之苗栗縣苗栗鎮<sup>(15)</sup>，高雄縣美濃鎮<sup>(31)</sup>以及南投縣日月潭地區<sup>(32)</sup>，其感染來源之第二中間宿主(淡水魚)<sup>(33)</sup>普遍分佈本省各淡水溪流與池塘中，且

為客籍台灣人所喜生吃。陳等<sup>(34-36)</sup>報告本省各山地國小中，只有花蓮縣吉安鄉南華國小一名學童檢出蟲卵，這次在泰安村受檢之242名村民中，平均感染率為9.5%，其中成人為26.4%，國中生2.5%，國小2.0%，是值得注意的。至於其自然界之中間宿主與保蟲宿主之感染情形與分佈狀況，以及全鄉村民之罹患率，則有待進一步之調查研究必要。

## 參考文獻

1. CHANG KC, SUN YL, CHIU JK: A survey on parasitic infections among aborigines in remote area of Chien-Shih District, Hsinchu County, Taiwan. J Formosan Med Assoc 72; 297-303, 1973.
2. CHIU JK, CHIU PC, TSENG PT: Prevalence of intestinal parasitic infections among inhabitants of Tan-Nan Village, Nantou County, Taiwan. Chinese J Microbiology 12(4); 155-159, 1979.
3. CHUNG WC, FAN PC, CHIU HM: Survey of helminthic infection and treatment of *Taenia* species infection among the aborigines in Chien-Shih District, Hsin-Chu County, Northern Taiwan. Chinese J Microbiol Immunol 18(2); 36-43, 1985.
4. CHUNG WC, LIU JC: Survey and Treatment of *Taenia saginata* with atabrine in aborigines in Wufeng District, Hsinchu County, Taiwan. Chinese J Microbiology 4; 45-49, 1971.
5. CROSS JH, MURRELL KD, CATES MD: Survey for intestinal parasites in aborigines in Nantou County, Central Taiwan, with a report of



- two spurious infections of *Macracanthorhynchus hirundinaceus*. Chinese J Microbiol 4; 116-122, 1971.
6. FAN PC, CHUNG WC, CHAN CH, LEE KM, WANG CC, WU CC: A pilot control study of common intestinal parasites and head louse among aboriginal children in Taiwan, ROC. Part I. Prevalence and chemotherapy of parasitic infections among aboriginal children in Nan-Ao and Ta-Tung Districts, Ilan County, North-eastern Taiwan. Natl Sci Counc Monthly, ROC 10(9); 773-798, 1982.
  7. FAN PC, CHUNG WC, CHAN CH, CHENG FY, CHEN YA, HSU MC: A pilot control study of common intestinal parasites and head louse among aboriginal children in Taiwan, ROC. (II) The 2nd year survey and treatment of intestinal helminths and head louse infections among aboriginal children in Ta-Tung and Nan-Ao Districts, Ilan County, North-eastern Taiwan. Natl Sci Counc, Monthly, ROC 11(12-3); 1511-1535, 1984.
  8. HSIEH HC: Parasites and parasitic disease other trematodiasis of the human gastro-intestinal system in Taiwan. Proc of the 7th SEAMEO Regional Seminar/Laboratory Meeting on Tropical Medicine and Public Health. The infections disease of the gastro-intestinal system in South-east Asia and Far East. 28 Sept.-2 Oct. 1970, Taipei, Taiwan. pp. 75-151.
  9. HUANG KP, YEN CM, CHEN ER, HSIEH HC: Studies on parasitic infections and nutrition among school children in remote areas of Ping-Tung County. I. Investigation of parasitic infections. Scientific Programme & Abstracts of the 18th Annual Meeting of the Chinese Society of Microbiology, Dec. 2, 1984, Taipei, ROC. pp. 53-54.
  10. CHANG TY, ONG SJ, CHEN CY, HSIEH WC: The epidemiological survey for clonorchiasis at the Mingte Dam area in Miao-Li County. Scientific program and abstracts of the 2nd Annual Meeting of the Chinese Society of Parasitology, Dec. 6-8, 1986, Kaohsiung, Taiwan, ROC., pp. 51-52.
  11. CHOU CH, HUANG WH: Helminthic infections among school children in Hsi-Hu District of Miao-Li Prefecture, Taiwan. J Formosan Med Assoc 69; 484-488, 1970.
  12. CHOU CH, KAO CT: *Paragonimus* and intestinal helminthic infections among school children in San-Wan District of Miao-Li County, Taiwan. J Formosan Med Assoc 71; 525-529, 1972.
  13. HUANG YW: A survey of lung-fluke and intestinal helminthic infections among school children in Shih-Tan township of Miao-Li County, Taiwan. Chinese J Microbiol 7; 132-136, 1974.
  14. LÜ SC: A survey on helminthic and protozoan infections among aboriginal school children in Miao-Li County, Taiwan. J Formosan Med Assoc 67; 120-133, 1968.
  15. ONG SJ, LU SC: Protozoan and

- helminthic infections among the government workers and students of Miao-Li District in Miao-Li County: A highly endemic area of clonorchiasis in Taiwan. Chinese J Microbiol 12; 13-20, 1979.
16. CHUNG WC: Multiple infection of *Taenia* sp. among Taiwan aborigines with emphasis on a worm with double genital pores. Program and Summary of Sino-Japanese Seminar on parasitic Zoonoses. Aug. 28-29, 1982, Hirosaki, Japan. pp. 69-71.
  17. RITHIE LS: An ether sedimentation technique for routine stool examination. Bull U.S. Army Dept 8; 326, 1948.
  18. GRAHAM GL: A device for the diagnosis of *Enterobius* infection. Amer J Trop Med 21; 159, 1941.
  19. BERGNER JF JR, MCCRODDAN DM, KHAW OK, DEVLIN J: A team approach to a disease survey on an aboriginal island (Orchid Island), Taiwan. 1. Protozoa and helminth parasites of the Yami aborigines. Chinese J Microbiol 6; 164-172, 1973.
  20. CHAN CH, CHUNG WC, HSU MC, CHEN YA, FAN PC: Studies on taeniasis in Taiwan. I. Survey and treatment of taeniasis in Wulai District, Taipei County. Program and Abstracts of the 1st Seminar on Parasitic Disease. Sept. 30-Oct. 4, 1985, Taipei, Taiwan, ROC pp. 19.
  21. CHAN CH, CHUNG WC, HSU MC, FAN PC: Studies on taeniasis in Taiwan. VII. Prevalence of taeniasis among Atayal aborigines in Nan-ao District, Ilan County, Northeastern Taiwan. Scientific Program & Abstracts of the 20th Annual Meeting of Chinese Society of Microbiology and the 2nd Annual Meeting of the Chinese Society of Parasitology, Dec. 6-8, 1986, Kaohsiung, Taiwan, ROC., pp. 35.
  22. CHUNG WC, CHAN CH, CHEN YA, HSU MC, CHAO D, FAN PC: Studies on taeniasis in Taiwan. II. Prevalence and treatment of taeniasis on Lanyu (Orchid Island) District, Taitung County. Program and Abstracts of the 1st Seminar on Parasitic Disease, Sept. 30-Oct. 4, 1985, Taipei, Taiwan, ROC., pp. 20.
  23. FAN PC, CHUNG WC, CHAN CH, HSU MC, HUANG SH: Studies on taeniasis in Taiwan. V. Epidemiology of taeniasis in Tatung District, Ilan County. Scientific Program & Abstracts of the 19th Annual Meeting of the Chinese Society of Microbiology, Dec. 1-2, 1985, Taichung, Taiwan, ROC., pp. 47.
  24. HSIEH HC: Human taeniasis in Taiwan with reference to recent epidemiological studies in south Taiwan. Formosan Science, 14; 12-22, 1960.
  25. LIU JC, CHUNG WC: Intestinal parasitic infections among aborigines on Lan-Yu Island, Taitung, Taiwan. Chinese J Microbiol 5; 93, 1972.
  26. WU YY, LÜ SC: A survey on protozoan and helminthic infections among middle and primary school children at Chien-Shih District, Hsin

- Chu County, Taiwan. Chinese J Microbiol 12; 113, 1979.
27. YU JC, KAO CY: Present status of intestinal parasitic infections and head louse infection among aborigines of Lan-Yu (Orchid Island), Taiwan. J Formosan Med Assoc 81; 408-413, 1982.
  28. CHEN ER, YEN CM, HSIEH HC, SHIH CC: Recent status on pinworm infections of primary school children in Southern and Eastern Taiwan. Kaohsiung J Med Sci 1; 161-167, 1985.
  29. CHUNG WC, CHANG KC, HORNG SH: Epidemiology of *Enterobius vermicularis* infection among orphans in orphanages in Taipei City. Chinese J Microbiol 11; 30-36, 1978.
  30. ANN-PING: Survey of parasitic infection among children of four primary schools. J of China Junior College of Municipality, 3; 24-35, 1982.
  31. CHOW LP: Epidemiological studies of clonorchiasis at Meinung township in Southern Taiwan. Formosan Sci 14; 135-165, 1960.
  32. CLARKE MD, KHAW OK, CROSS JH: Clonorchiasis in Sun Moon Lake area. Chinese J Microbiol 4; 50-60, 1971.
  33. FAN PC: Medical Parasitology, 3rd ed. National Yang-Ming Medical College, Taipei, Taiwan, ROC. pp. 247, 1978.
  34. CHEN ER, YEN CM: Studies on the control of Zoonotic clonorchiasis (IV) Human Survey, Immunodiagnosis and treatment. Natl Sci Council, Monthly, 11(12-2); 1401-1408, 1984.
  35. CHEN ER, YEN CM: Study on survey, immunodiagnosis and treatment of human clonorchiasis on Southern Taiwan. J Formosan Med Assoc 84 (5). 529-535, 1985A.
  36. CHEN ER, YEN CM: Human clonorchiasis survey on Taiwan and its immunodiagnostic technics. Chinese J Microbiol Immunol 18(3); 46-53, 1985B.



## Prevalence of Parasitic Infections among Aborigines in Tai-An District, Miao-Li County, Taiwan

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### SUMMARY

During July-August, 1983, a field survey of intestinal parasites at Tai-An Village was made with Formalin-Ether-Concentration Technique and aboriginal children in 7 primary schools (P.S.) for *Enterobius* with a single perianal scotch adhesive tape and head louse by naked eye in Tai-An District, Miao-Li County. The results are summarized as follows.

The overall infection rate of intestinal parasites among 242 aborigines was 72.3%, in which, the rate of 43.8% was *Trichuris*; 26.4%, *Ascaris*; 20.7%, hookworm; 9.5% *Clonorchis*; 5.0%, *Giardia*; 4.5%, *E. coli*; 0.8%, *P. westermani*; *S. stercoralis*; *H. nana*; and *Isosporia*; and 1 case (0.4%) was *Iodamoeba*. Among 175 positive patients, the multiple infection rate was 54.9%, 35.4%, 8.0%, 1.1% and 0.6% with 1, 2, 3, 4 and 5 species respectively.

*Enterobius* infection rate among 254 aboriginal children was 9.1%. The rate in the female (14.3%) was significantly higher than in male (4.4%) ( $p < 0.05$ ). While, the rate was also higher in Wen-Shui P.S. (20.0%) than in Tai-Hsing P.S. (16.7%), Ching-Shan P.S. (10.7%), Tai-An P.S. (7.9%), Mei-Yuan P.S. (4.9%), Ching-An P.S. (4.7%) and Lung-Shan P.S. (3.4%). The infection rates according to grades are 6.9% in Grade I, 14.7% in Grade II, 7.4% in Grade III, 10.4% in Grade IV and 8.3% in Grade V.

The head louse infection rate among 254 aboriginal children was 29.1%. The rate in female (52.1%) was significantly higher than in male (8.9%) ( $p < 0.05$ ). The rate showed much higher in Tai-An P.S. (71.1%) than in Tai-Hsing P.S. (33.3%), Mei-Yuan P.S. (26.8%), Ching-Shan P.S. (23.2%), Ching-An P.S. (20.9%), Lung-Shan P.S. (17.2%) and Wen-Shui P.S. (14.3%). While, the rates in 5 Grades were 37.9% in Grade I, 26.5% in Grade II, 29.6% in Grade III, 22.9% in Grade IV and 26.7% in Grade V.

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