

## HOMING IN ON HELMINTHS\*

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I am honored to give this lecture dedicated to the memory of Dr. Fred Soper, whose pioneering efforts in identifying the insect vectors of malaria and yellow fever are legendary. Soper and his colleagues also played key roles in restoring the concept of eradication to respectability after the collapse of earlier campaigns to eradicate hookworm and other diseases. Despite the risk of failure in such efforts if they are not well conceived and executed, the onus of abetting unnecessary suffering by not exploiting the unique advantages of

the Pan American Health Organization (PAHO) and the region of the Americas have led so visibly in the overzealous to eradicate smallpox, rabies, and

other diseases. Despite the risk of failure in such efforts if they are not well conceived and executed, the onus of abetting unnecessary suffering by not exploiting the unique advantages of

**TABLE 1**  
*Major helminthic infections*

Parasitic infection	Estimated worldwide prevalence (millions)
Ascariasis	1,000
Hookworm	900
Trichuriasis	750
Enterobiasis	400
Schistosomiasis	200
Filariasis	90
Strongyloidiasis	80
Taeniasis	70
Clonorchiasis/ opisthorchiasis	>30
Onchocerciasis	18
Fascioliasis	17

**TABLE 2**  
*Geographic distribution of onchocerciasis\**

Area	Case prevalence (%)	Main intervention
OCP region	2.3 million (13)	Vector control, ivermectin
Nigeria	7.0 million (39)	Ivermectin
Other areas of Africa	8.4 million (47)	Ivermectin
Americas	0.1 million (1)	Ivermectin

\* OCP = onchocerciasis control program (in West Africa).

still extant in the American tropics (Table 2).<sup>6</sup>  
An estimated 340,000 persons are blind from  
the disease, including 15% of the entire

Diphyllobothriasis

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population and up to 40% of the adult male

TABLE 3

*Prevalence of onchocerciasis and dracunculiasis*

	Onchocerciasis	Dracunculiasis
Regions affected	Africa, Americas	Africa, southern Asia
Estimated prevalence	18 million	3 million
Human impact	Blindness	Crippling
Control efforts	Regional OCP* - \$120 million, 1974	Global eradication by 1995 - \$75 mil

Cost effectiveness†	ication in the Americas by 2000 \$300 per healthy life-year gained (vector control)	\$25 per healthy life-year gained (water supply)
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\* OCP = Onchocerciasis Control Program.  
† World Bank estimates, 1991.

petus for initiating this program was the visit by then World Bank president Robert S. Mac-Namara to an endemic area of West Africa which turer, Merck, to donate the drug for treatment of onchocerciasis patients worldwide beginning in 1987. This has provided more security against

TABLE 4  
*Status of dracunculiasis eradication by country, December 1991*

Country	Status
Cameroon, Kenya, Pakistan Chad, India, Nigeria	Intensive case containment strategy now appropriate Nationwide reductions evident
Benin, Burkina Faso, Cote d'Ivoire, Niger, Mauritania, Senegal, Togo Chad, Mali, Uganda Cape Verde, Sierra Leone	Completed nationwide search Nationwide search underway Nationwide search done

1991. Nigeria and Ghana, which conducted their first national searches for cases in 1988 and 1989, respectively, and which have more cases of dracunculiasis than any other country, are well-advanced in their programs to eradicate the disease. These two highly endemic countries reduced the combined total of their cases by more than 20%

this year of materials and printing for health education posters and other paper products by Georgia-Pacific and the Communicorp Company have encouraged the internal efforts of several African countries. Some endemic countries are now using the presence of dracunculiasis to successfully solicit more external assistance for

between 1989 and 1990, from about 820,000 cases to approximately 520,000 cases.<sup>20</sup>

providing safe water supplies to rural populations. The main needs in Africa now are to achieve

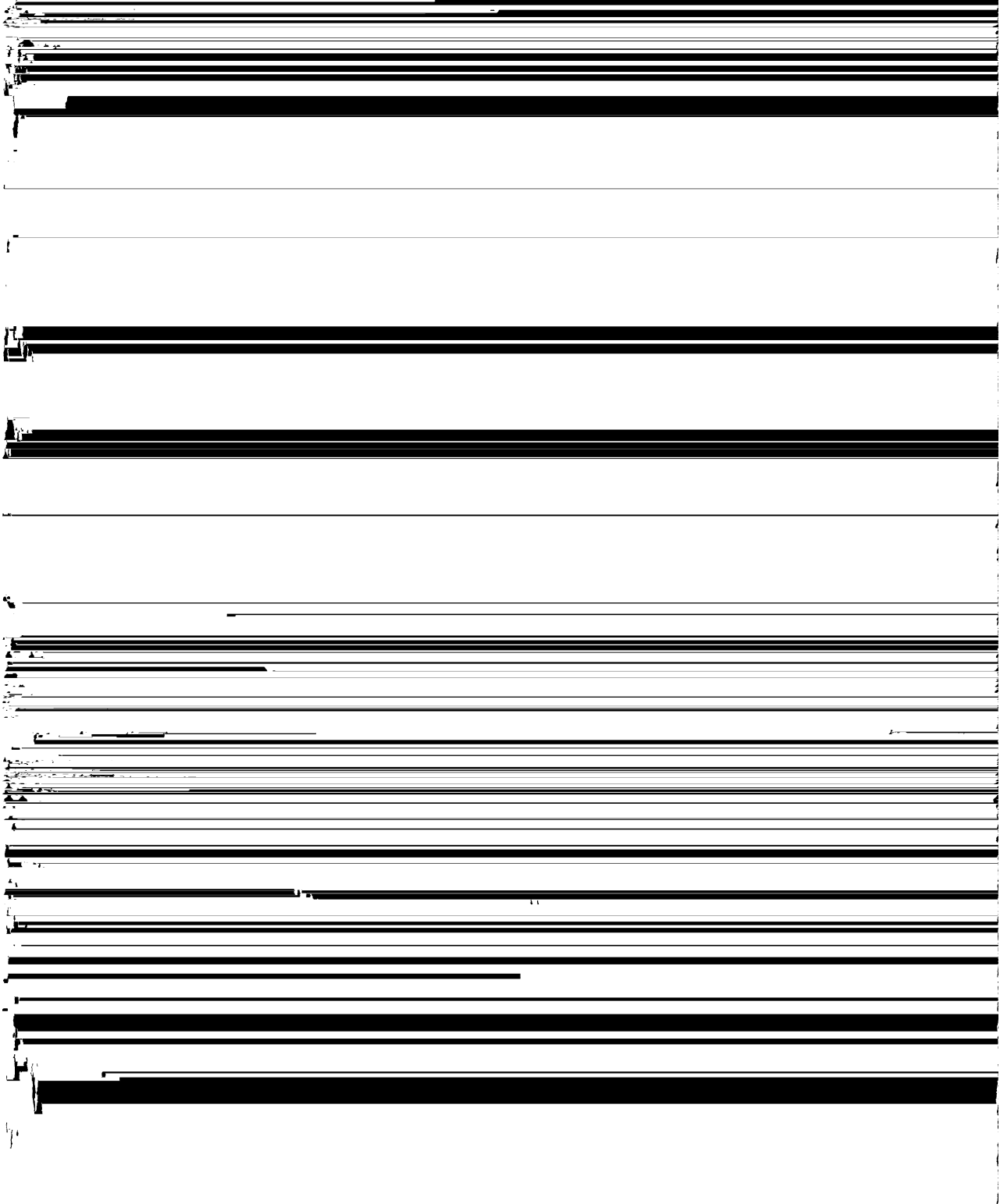
In the Nanumba District of Ghana's Northern Region, over 70% of all villages had at least one

similar levels of public awareness and urgency about dracunculiasis transmission in the endemic

paign against the same pest when it threatened livestock in Mexico.<sup>23</sup> Humans deserve at least as much protection as cattle.

Some lessons of the dracunculiasis eradication campaign are already apparent. They include the power of relatively inexpensively acquired data

rates of approximately 25–31% among 10–24-year-old individuals in the Upper Western Region in the late 1960s,<sup>25</sup> to rates of over 70% among 10–20-year-old individuals in a village of Volta Region surveyed in 1979–1980.<sup>26</sup> In general, schistosomiasis hematobium is widely dis-



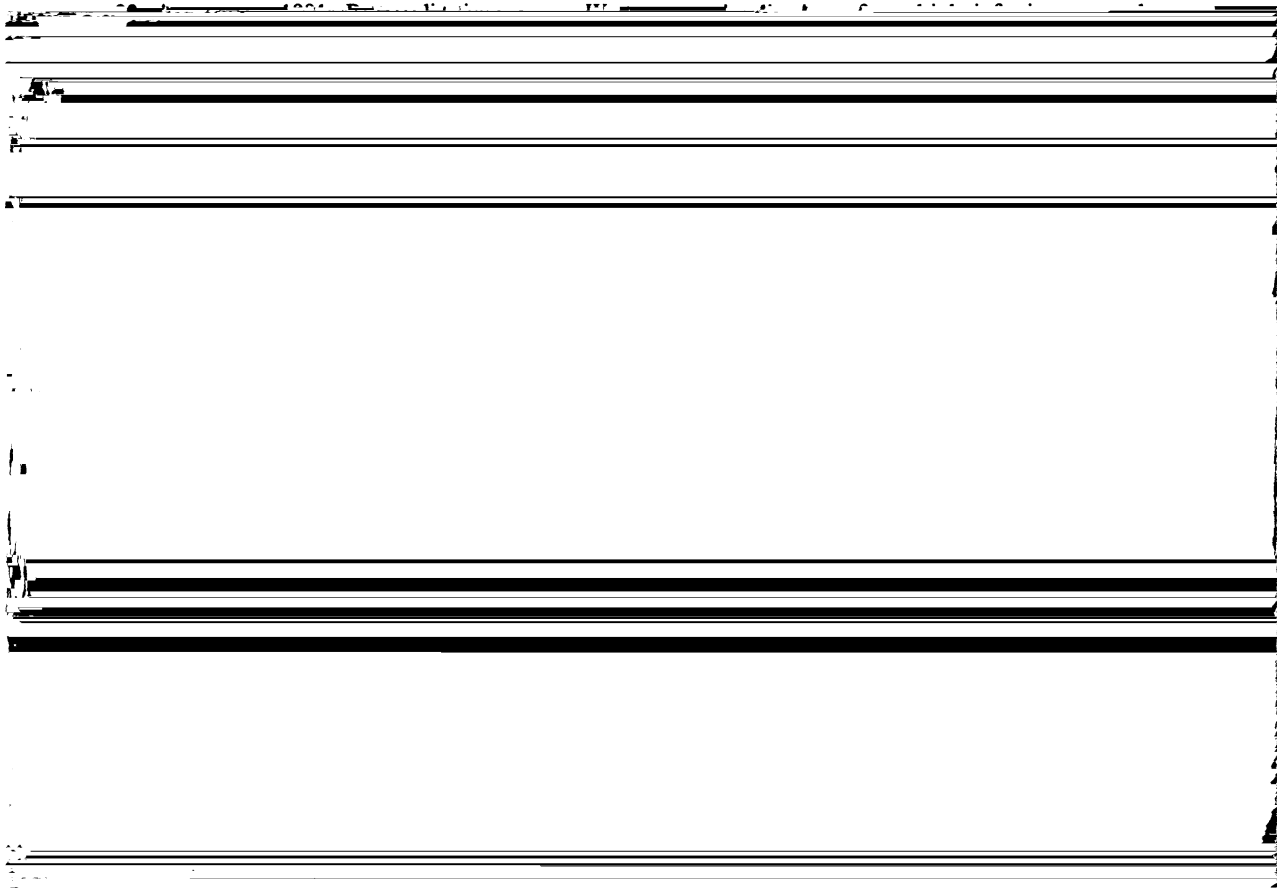


ulations for these and other expected outcomes. Additional studies of safety and efficacy of the drug combinations used, and their timing and sequencing may also be necessary before the drugs

2. Mahler H, 1980. Introduction. *The Work of WHO, 1978-1979*. Geneva: The World Health Organization, xii.
3. Goodfield J, 1991. *A Chance to Live*. New York: Macmillan, 178.
4. CDC, 1990. *International task force for diseases*

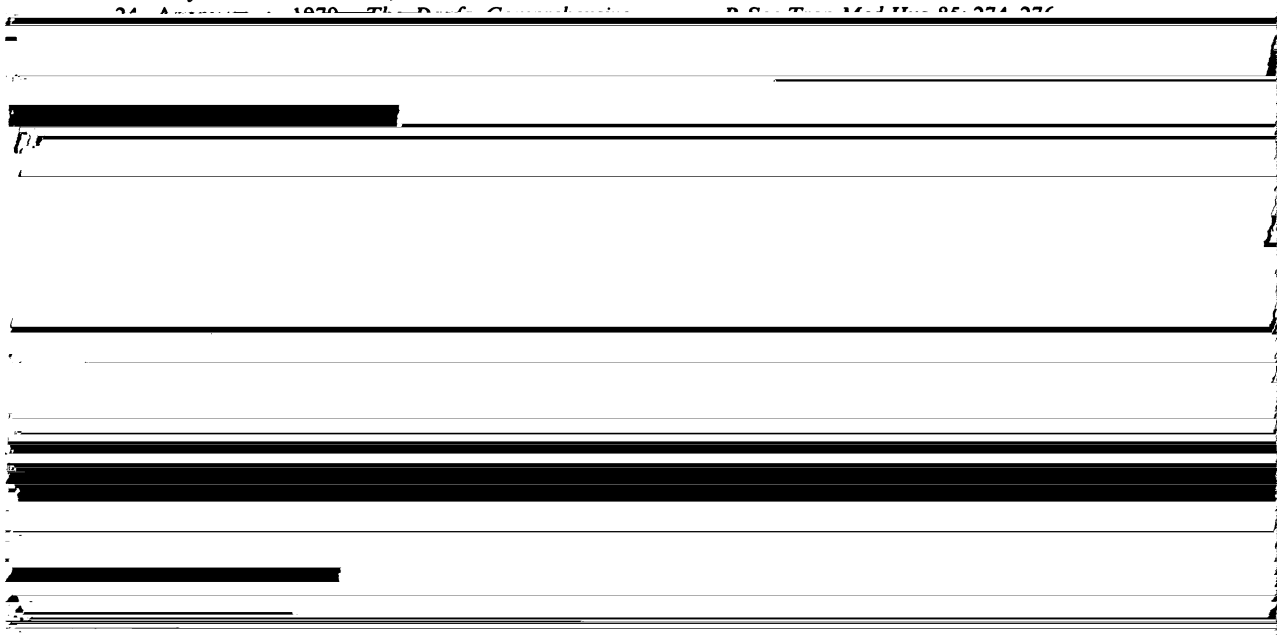






*Africa. October 14–20, 1934.*

the control of human helminth infections. *Trans*



*Rural Health and Family Planning Project—Fi-*  
*nal Report* Accra: Department of Community

33. Stephenson LS, Latham MC, Kino ti SN, Kurz KM,  
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