TREASURY DEPARTMENT UNITED STATES PUBLIC HEALTH SERVICE

HUGH S. CUMMING, SURGEON GENERAL

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PER CAPITA MEDICINAL REQUIREMENTS OF NARCOTICS.1

Data Secured in a Narcotic Survey of Allegany County, Maryland.

By A. G. DUMEZ, Pharmacologist, Division of Pharmacology, Hygienic Laboratory, United States Public Health Service.

In connection with the drug-addiction studies being carried out by the United States Public Health Service, a narcotic survey of Allegany County, Md., was made during the period May 8 to 28, 1924. The object of this survey was to secure accurate data on the quantities of narcotics used annually for medicinal purposes in a restricted area, so that a reliable basis might be obtained for computing the requirements of the country as a whole.

Allegany County, Md., was selected for this purpose for several reasons, namely, (1) because of its remoteness from the sea coast and boundary lines, where the greater possibility of obtaining narcotics might tend to vitiate the results; (2) because the county is fairly distant from and contains no large cities in which it is thought that abnormal conditions are more likely to prevail; (3) because the occupations of its inhabitants are quite diversified—farming, mining, railroading, and manufacturing being represented; (4) because the county is easily accessible from Washington. In other words, it was thought that Allegany County represents as nearly as possible a normal unit within easy reach of Washington where conditions prevail which can be taken as typical of the country as a whole.

The actual work of the survey consisted in visiting all of the narcotic registrants in the county and compiling from their records the amounts of narcotics dispensed or used during the period of one year. In all there were visited 69 physicians, 12 dentists, 20 retailers (pharmacists), 3 wholesalers (pharmacists), 1 veterinarian, and 5 hospitals and sanitoria. The records of each were examined in detail. records showed that for the period July 1, 1922, to June 30, 1923, the following quantities of narcotics were dispensed or used:

		Grains
Opium		38, 93
Codeine sulphate and phosphate		29, 41
Morphine sulphate and	22, 28	
Ethylmorphine hydroc	4,72	
Diacetylmorphine hydrochloride (heroin)		1,94
Cotarnine hydrochloride (stypticin)		
Apomorphine hydrochl	oride	9
		FI. 02
Exempt preparations ()	paregoric, Bateman's drops, Godfrey's cordial, etc.)	10, 36
	Total cocaine dispensed or used.	
Cocaine hydrochloride	NOT DESCRIBE	11,48

The equivalents of the foregoing quantities in terms of crude drugs are given in Table 2. In computing these equivalents the amount of anhydrous morphine present in opium has been taken as 10 per cent, of anhydrous codeine as 0.3 per cent, and of narcotine as 5 per cent. In computing the opium equivalent of the total quantity of opiates 855 grains of codeine sulphate have been subtracted from the 29,410 grains of codeine sulphate and phosphate, as this quantity can be extracted (on the 0.3 per cent basis) from the opium required to manufacture the stated quantities of morphine sulphate and hydrochloride, ethylmorphine hydrochloride, diacetylmorphine hydrochloride, and apomorphine hydrochloride. Likewise, the 788 grains of cotarnine hydrochloride have been omitted, as the quantity of narcotine which can be extracted from the opium required to manufacture the foregoing alkaloids and their derivatives is more than sufficient (on the 5 per cent basis) to vield this amount. In computing the coca leaf equivalent of the quantity of cocaine hydrochloride used, the yield of anhydrous cocaine has been taken as 0.5 per cent.

Table 2.—Opium equivalents of opiates.		
	0	rains of opium.
38, 987 grains of opium	-	38, 937
28, 555 grains (29,410-855) codeine sulphate	==	213, 219
22, 284 grains morphine sulphate	-	167, 130
4,724 grains ethylmorphine hydrochloride	=	36, 560
1,940 grains diacetylmorphine hydrochloride	=	13,060
93 grains apomorphine hydrochloride	=	850
10,366 fluid ounces exempt preparations	-	18, 906
Total		488, 662 69. 81 pounds
Coca teaj equivatent of cocatne.	Grain	s of coca leaves.
11, 485 grains of cocaine hydrochloride		2, 051, 220 293, 03 pounds

The per capita consumption of opium for Allegany County on the basis of a population of 69,938 as found for 1920 by the Bureau of the Census, United States Department of Commerce, would therefore be 6.98 grains. In the case of coca leaves, it would be 29.32 grains. To supply the entire United States on this basis, taking the population to be 106,000,000, would require the annual importation of approximately 105,697 pounds of opium and 443,988 pounds of coca leaves.

It is thought that the quantities of narcotics dispensed or used in this county represent fairly accurately the medicinal requirements at present, except in the case of cocaine and the exempt preparations. A census taken for the year July 1, 1923, to June 30, 1924, would no doubt show a much smaller quantity of cocaine used, as most of the dentists who used cocaine in 1922 to 1923 reported that they had since discontinued its use in favor of the synthetic local anesthetics. In the case of exempt preparations (paregoric), it is thought that, al-

though they were sold only in small amounts (in quantities not exceeding 2 fluid ounces), they were dispensed too frequently in some cases to the same individuals. It is also realized that some of the residents of the county may have purchased narcotics outside of the county (in near-by counties for instance); but it is thought that any error in the total amounts resulting from this cause would be counterbalanced by that introduced through the purchases made within the county by non-residents, place of the most release they may 8.0 and most

Acknowledgments.—It is desired here to thank the officials of the Maryland State board of health for their cooperation in making this survey, and especially for the loan of one of their drug inspectors, Mr. Henry Bernhardt, who assisted in the work throughout.

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