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Toxicity of Quinine, Quinidine, Hydroquinidine and Hydrocinchonidine in the Guinea Pig.

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The determinations were made in connection with observations on antimalarial value.[1, 2, 3] Guinea pigs, chiefly males, were injected subcutaneously in the flank with M/4 solutions in HCl to form very nearly the dihydrochlorides. Table I shows the numbers of animals dead or obviously dying 48 hours later, out of totals injected.

TABLE I. Toxicity of Four Cinchona Bases.

Base	M.W.	Doses in mg.-mol. per kg. 0.3	0.4	0.5	0.6	0.7
1. Quinine	324	0/4	0/8	8/30	14/30	22/30
1. Quinidine	"	7/30	17/30	26/30	7/8	—
2. Quinine	"	—	—	—	19/30	—
2. Hydroquinidine	326	—	13/30	—	—	—
3. Hydrocinchonidine	296	—	—	—	—	15/30

The quinidine contained 6.7% hydroquinidine,[4] a customary impurity, to as high as 30%,[4] in quinidine from cinchona bark but not in that from cuprea bark.[5] These 2 bases seem not to differ much in toxicity. Series 1 is a composite of observations on 8 groups of animals injected on as many different occasions, on each of which, except once, some received quinine and some quinidine. The error for composite results is usually small[6] so that we probably obtain an approximation to the 50% lethal dose (LD 50)[7] and the LD 25 and LD 75. These once obtained for quinine and quinidine, approximate LD 50s were predicted from previous rather slight data on the other bases and proved substantially correct, as shown. No animal was injected on more than one occasion.

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