22. On *Pseudokobusine*.

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On the supposition that from aconite roots of different sources, especially from the basic parts in the filtrates of the aconitines which hitherto have not yet been investigated, besides the known aconite alkaloids, some more related compounds, being valuable for the elucidation of the constitution of this group of alkaloids, may be found, the isolation of the new alkaloids was made by one of the writers.¹⁾

In the preceding papers kobusine $C_{20}H_{27}O_2N$, miyaconitine $C_{22}H_{29}O_6N$, and miyaconitinone $C_{23}H_{27}O_6N$ were described. In *Aconitum yesoense*, Nakai, occurring abundantly in Hokkaido, a new alkaloid, pseudokobusine $C_{20}H_{27}O_3N$ has now been found. This was isolated from the filtrate of jesaconitine. It has quite similar properties with kobusine and at the beginning it was considered as kobusine. On direct comparison it is, however, proved to be another base, having the following constants.

	Pseudokobusine				Kobusine		
	H_2O	mp.	$[\alpha]_D$		H_2O	mp.	$[\alpha]_D$
Base		271 — 272°	+ 50.0°			268°	+ 83.6°
Hydrochloride		307°	+ 29.3°	1 1/2		300°	+ 41.4°
Hydribromide	1	300°	+ 22.8°	1		285°	+ 40.7°
Perchlorate		260°				220°	
Picrate		260°				277°	
Methiodide		287°				287°	
Acety derivative		145 — 146°				134 — 140°	
	$C_{20}H_{25} \begin{cases} (OH)_2 \\ - O - \\ - N = \\ \boxed{\text{I}}_1 \end{cases}$				$C_{30}H_{26} \begin{cases} - OH \\ - O - \\ - N = \\ \boxed{\text{I}}_1 \end{cases}$		
	Pseudokobusine, $C_{20}H_{27}O_3N$				Kobusine, $C_{20}H_{27}O_2N$		

Pseudokobusine is also not toxic as in the case of kobusine. It is unsaponifiable and contains neither acetyl nor benzoyl group. Further, methoxyl as well as alkylimino group could not be detected. Nevertheless pseudokobusine is a tertiary base because of the formation of a methiodide by methyl iodide. On treatment with carbonyl reagents pseudokobusine was recovered unchanged.

1) H. Suginome and F. Shimanouchi A. 545 (1940), 220;
H. Suginome and S. Umezawa, Proc. 22 (1946), 115;
H. Suginome, S. Furusawa, Y. Chiba and S. Kakimoto, loc. cit. 22 (1946), 113.

By acetyl chloride it furnishes diacetyl-pseudokobusine $C_{24}H_{31}O_5N$, mp. 145 — 146°, indicating the presence of two hydroxyl groups. This is also supported by the fact that pseudokobusine yields dichloro-pseudokobusine $C_{20}H_{25}ONCl_2$, mp. over 320° by thionyl chloride. On catalytic hydrogenation in glacial acetic acid in presence of platinum oxide it produces dihydro-compound, $C_{20}H_{29}O_3N \cdot H_2O$ (alcohol), mp. 245 — 249°, $[\alpha]_D^{16} = -57.9^\circ$ (chloroform), absorbing 1.07 mols. of hydrogen. Dihydropseudokobusine yields easily crystallisable salts.

	mp.
B·HCl·H ₂ O	over 310°
B·HBr	over 310°
B·HClO ₄ ·H ₂ O	138°
Picrate	260°
Methiodide	287°
The chloroplatinate has no mp.	

By acetyl chloride dihydropseudokobusine yields a triacetyl derivative $C_{20}H_{26}(OCOCH_3)_2ON \cdot COCH_3$, mp. 231°.

On these observations the formula of pseudokobusine may be extended as above.

It is interesting that kobusine and pseudokobusine are accompanied by the same aconite alkaloid, jesaconitine. The former occurs in Sakhalin but the latter in Hokkaido. Regarding the fundamental base of this group of alkaloid, $C_{19}H_{29}N$ and $C_{20}H_{31}N$ may be mentioned and aconitines, being highly toxic, belong to the former. On the other hand lucidusculine, atisine, kobusine and pseudokobusine, having low toxicity, considered to be derived from the latter.