

$\alpha$ - and  $\beta$ -Aminoalkyl(aryl)benzenes and their derivatives. A. OGATA. Tokyo Imp. Univ. *Yakugaku-Zasshi (J. Pharm. Soc. Japan)* No. 445, 193-216(1919).—For the study of the relation between chem. constitution of  $\text{NH}_2$  compds. and their local narcotic actions, O. has prepd. (1) 5  $\beta$ -aminoalkyl(aryl)benzenes; (2) 5  $\alpha$ -aminoalkyl(aryl)benzenes; (3) 4 aryl derivs. of (1) and (2), (4) 2 *N*-alkylaryl derivs. of (1), and (5) 3 mixed sec. alkylamines. Primary amines can be prepd. from the cyanides by reduction with Na. O. obtained  $\text{Ph}(\text{CH}_2)_2\text{NH}_2$  (a) from  $\text{PhCH}_2\text{CN}$  (Ladenburg, *Ber.*, 19, 782) (yield 68%), and isohexylamine from iso-AmCN. However,  $\text{PhCH}_2\text{CH}(\text{NH}_2)\text{Me}$  (b) can easily be prepd. by the action of 2 g.  $\text{HCO}_2\text{NH}_4$  on 2 g.  $\text{PhCH}_2\text{CO-Me}$  at 180-200°. Similarly were prepd. *p*-aminoisohexylbenzene (c),  $\text{PhCH}_2\text{CH}(\text{NH}_2)\text{CH}_2\text{CHMe}_2$  b<sub>8</sub> 121° ( $\text{C}_{12}\text{H}_{19}\text{N.HCl}$ , m. 230-1°),  $\beta$ -amino-octylbenzene (d),  $\text{PhCH}_2\text{CH}(\text{NH}_2)(\text{CH}_2)_5\text{Me}$ , b<sub>75</sub> 145° ( $\text{C}_{14}\text{H}_{23}\text{NHCl}$ , m. 134-6°),  $\text{PhCH}_2\text{CH}(\text{NH}_2)\text{Ph}$  (e) (Leuckart & Jaussen., *Ber.*, 22, 1404),  $\text{PhCH}(\text{NH}_2)\text{Me}$  (f) (yield, 65%; Wallach, *Ann.* 343, 60),  $\alpha$ -aminoisohexyl benzene (g),  $\text{PhCH}(\text{NH}_2)(\text{CH}_2)_2\text{CHMe}_2$ , b<sub>3</sub> 146° ( $\text{C}_{12}\text{H}_{19}\text{N.HCl}$ , m. 289°), and  $\alpha$ -aminohexylbenzene (h),  $\text{PhCH}(\text{NH}_2)(\text{CH}_2)_5\text{Me}$ , B<sub>15</sub> 145°,  $\text{C}_{13}\text{H}_{21}\text{N.HCl}$ , m. 185-6°; from  $\text{PhCH}_2\text{COCH}_2\text{CHMe}_2$ ,  $\text{PhCH}_2\text{CO}(\text{CH}_2)_5\text{Me}$ ,  $\text{PhCHCOPh}$ , m. 250° (L. and J. gave 242-3°),  $\text{PhCO}(\text{CH}_2)_2\text{CHMe}_2$  and  $\text{PhCO}(\text{CH}_2)_5\text{Me}$ , resp.  $\text{PhCH}(\text{NH}_2)\text{Ph}$  (g) was also obtained by the interaction of  $\text{Ph}_2\text{CO}$  and  $\text{NH}_3$ , and  $\text{C}_{12}\text{H}_{13}\text{NHCl}$ , m. 287°.  $\text{PhCH}_2\text{CH}(\text{NH}_2)\text{Ph}$  (k) was prepd. by the reduction of  $\text{PhCH}(\text{C}=\text{NOH})\text{Ph}$ .  $\text{PhCH}_2\text{NHPh}$  (l) b<sub>298</sub> 300° ( $\text{C}_{12}\text{H}_{13}\text{NHCl}$ , m. 197°), was prepd. more conveniently by the reduction with 6 g. Zn dust of 5.5 g. benzylidenephénylazoxime which was obtained by the condensation of equal parts of BzH and  $\text{PhNO}_2$  and Zn-AcOH. Other sec. amines such as  $[\text{Ph}(\text{CH}_2)_2]_2\text{NH}$  (m);  $\beta$ -phenylisopropyl benzyl amine (n),  $\text{C}_{16}\text{H}_{19}\text{N}$ , b<sub>24</sub> 194° ( $\text{C}_{16}\text{H}_{19}\text{N.HCl}$ , m. 186.5°);  $\text{Ph}(\text{CH}_2)_2\text{NH.CH}_2\text{Ph}$  (o) and  $(\text{C}_5\text{H}_{11})_2\text{NH}$  (p) ( $\text{C}_{10}\text{H}_{23}\text{N.HCl}$ , m. 284°), have been obtained by the reduction of the condensation products of  $\text{PhCH}_2\text{CH}_2\text{NH}_2$  and  $\text{PhCH}_2\text{CHO}$ ,  $\text{PhCH}_2\text{NH}_2\text{CH}_2\text{Me}$  and BzH, and  $\text{Ph}(\text{CH}_2)_2\text{NH}_2$  and BzH with Na, resp.  $\alpha$ -Benzylisoamylamine (q),  $\text{C}_{19}\text{H}_{25}\text{N}$ , b<sub>25</sub> 202° ( $\text{C}_{19}\text{H}_{25}\text{NHCl}$ , m. 166°), isohexylisoamylamine (r),  $\text{C}_{11}\text{H}_{25}\text{N}$ , b<sub>758</sub> 208° ( $\text{C}_{11}\text{H}_{25}\text{NHCl}$ , m. 258-9°;  $\text{C}_{11}\text{H}_{26}\text{N.SnCl}_4$ , m. 198°) and heptylisoamylamine (s),  $\text{C}_{12}\text{H}_{27}\text{N}$ , b<sub>761</sub> 229° ( $\text{C}_{12}\text{H}_{27}\text{N.HCl}$ , m. 235°), were prepd. by the interaction of  $\text{PhCH}_2\text{NHC}_5\text{H}_{11}$  and  $\text{PhCH}_2\text{Cl}$ ,  $(\text{Me})_2\text{CH}(\text{CH}_2)_3\text{NH}_2$  and  $(\text{Me})_2\text{CH}(\text{CH}_2)_2\text{Br}$  and  $\text{Me}(\text{CH}_2)_6\text{NH}_2$  and  $(\text{Me})_2\text{CH}(\text{CH}_2)_2\text{Br}$ . It was proven by the tongue-test that the hydrochlorides of the bases, d, e, f, n and r have a hypnotic action.