Table 1. Section of a counting house calendar for estimating intervals in days (*3*).

Jan.	Feb.	Mar.	Apr.	May	June
1 364	32 333	60 305	91 274	121 244	152 213
2 363	33 332	61 304	92 273	122 243	153 212
3 362	34 331	62 303	93 272	123 242	154 211
4 361	35 330	63 302	94 271	124 241	155 210
5 360	36 329	64 301	95 270	125 240	156 209
6 359	37 328	65 300	96 269	126 239	157 208
7 358	38 327	66 299	97 268	127 238	158 207

July	Aug.	Sept.	Oct.	Nov.	Dec.
182 183	213 152	244 121	274 91	305 60	335 30
183 182	214 151	245 120	275 90	306 59	336 29
184 181	215 150	246 119	276 89	307 58	337 29
185 180	216 149	247 118	277 88	308 57	338 27
186 179	217 148	248 117	278 87	309 56	339 26
187 178	218 147	249 116	279 86	310 55	340 25
188 177	219 146	250 115	280 85	311 54	341 24

a year or extending over several years (*2*). Thus, for calculating, on 30 Jan. 1955, the age of an animal born 28 Dec. 1951, the following data are summed:

Days remaining 1951	3
Days for 3 intervening years	1095
29 Feb. 1952	1
Days elapsed 1954	30
Age in days	1129

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References and Notes

1. M. R. Harris, *Science* **118**, 309 (1953).
2. Developed in connection with a study supported by the American Cancer Society.
3. Copies of the calendar, within reasonable limits, can be obtained from G. J. Cox.

10 March 1955.

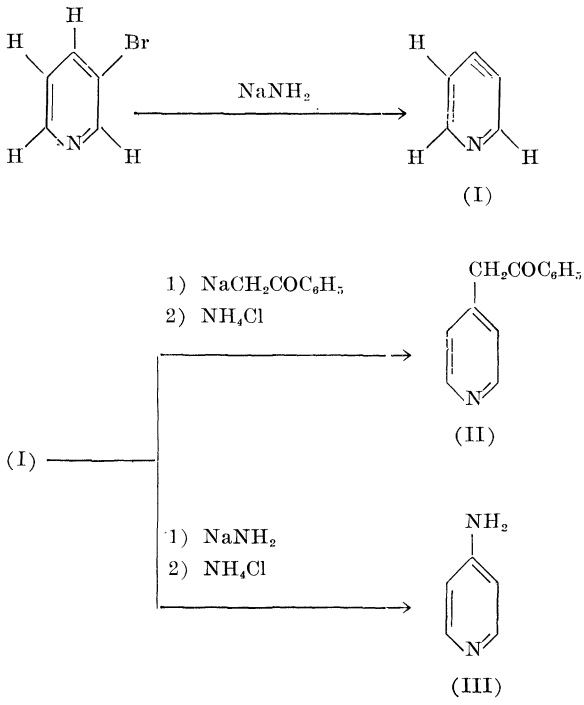
Rearrangement in the Reaction of 3-Bromopyridine with Sodium Amide and Sodioacetophenone

In connection with an extensive study of the chemistry of the tar bases and their derivatives, we have investigated the reaction of sodioacetophenone with 3-bromopyridine as a possible route to the unknown 3-phenacylpyridine.

From the attempted reaction of equivalents of 3-bromopyridine and sodioacetophenone—prepared from the ketone and sodium amide—in refluxing toluene, only the starting materials were isolated.

However, on processing a reaction mixture that was obtained by adding a liquid ammonia suspension of two equivalents of sodium amide to a liquid ammonia suspension of a mixture of one equivalent each of 3-bromopyridine and sodioacetophenone, there was isolated, in addition to a large amount of amorphous nitrogenous material, 13.5 percent of 4-phenacylpyridine (II), mp 112.6 to 113.6° (*1*) (from 60° to 70° petroleum ether) alone and when mixed with an authentic sample, and 10.0 percent of 4-aminopyridine (III), mp 157 to 158.4° (*2*) from benzene) [N-benzoyl derivative, mp 207° (from hot water). Analysis calculated for $C_{12}H_{10}N_2O$, N, 14.14; found, 14.20].

The formation of these compounds (II and III) may be rationalized by assuming an elimination-addition mechanism involving the transient existence of a "pyridyne" intermediate analogous to the "benzyne" postulated earlier by Roberts *et al.* (*3*) in the rearrangement of chlorobenzene-1-C^{14} when treated with potassium amide.



Further work is now in progress in this laboratory to determine the scope and limitations of this and related reactions.

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References and Notes

1. J. M. Smith, Jr., *et al.*, *J. Am. Chem. Soc.* **70**, 3997 (1948).
2. E. Koenigs, G. Kenne, W. Weiss, *Ber. deut. chem. Ges.* **57**, 1172 (1924).
3. J. D. Roberts *et al.*, *J. Am. Chem. Soc.* **75**, 3290 (1953).
* Monsanto Chemical Co. research fellow.

14 March 1955.