TABLE I
Preparation of aliphatic amines from Ketones

	Ketone	Corresponding amine	B.P. C°/685 mm.	Yield %
1	Acetone	Isopropylamine $CH_3CH(NH_2)\cdot CH_3$	32–34	91
2	Methyl ethyl ketone	2-Aminobutane $C_2H_5CH(NH_2)\cdot CH_3$	60–62	87
3	Diethyl-ketone	3-Aminopentane $C_2H_5CH(NH_2)\cdot C_2H_5$	84–86	75
4	Methyl-*n*-propylketone	2-Aminopentane $CH_3CH(NH_2)CH_2C_2H_5$	88–89	87
5	Methyl-isobutylketone	β-Isohexylamine $CH_3CH(NH_2)\cdot CH_2\cdot CH(CH_3)_2$	99–102	80
6	Methyl-*n*-amylketone	2-Aminoheptane $CH_3\cdot CH(NH_2)\cdot (CH_2)_4\cdot CH_3$	136–138	46
7	Methyl-*n*-hexylketone	2-Aminooctane $CH_3\cdot CH(NH_2)\cdot (CH_2)_5CH_3$	164–165	60

tried later on with very encouraging results. Acetone was converted into isopropylamine in good yields by using aqueous or alcoholic ammonia in excess with hydrogen under a pressure of 100 lbs./sq. in. and at a temperature of 50-60° C. in presence of Raney's nickel as catalyst (5-10 per cent.).

A number of other aliphatic ketones were used in the synthesis of the corresponding aliphatic amines (Table I). In the case of water-immiscible ketones, solvents, higher temperature and longer period of reaction were necessary. Amines were isolated from the reaction mixture as their hydrochloride salts, regenerated with alkali and purified by repeated distillation. In all the experiments the primary amines were the main products, and only negligible amounts of secondary or tertiary amines were obtained.

The mechanism of the reaction has been explained by Loffler[6] and Magnonic.[7] The present series of experiments indicate that this method is of general applicability for converting aliphatic ketones into corresponding amines.

Details of this work will be published elsewhere.

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H. L. BAMI.
B. H. IYER.
P. C. GUHA.

Organic Chemistry Labs.,
Dept. of Pure & Applied Chemistry,
Indian Institute of Science,
Bangalore.
July 25, 1947.

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PHENOLPHTHALEIN AS ADSORPTION INDICATOR IN ARGENTOMETRIC TITRATIONS

IN a recent communication[1] the applicability of resorcinol-succinein as adsorption indicator has been described. I find that phenolphthalein is adsorbed to an appreciable extent by the AgCl—Ag^+ system, and can be used as an adsorption indicator for titrations of chloride ions against silver ions at a pH of 8-10. In this range it gives on adsorption a definite pink colour to the silver chloride particles.

For the practical application of the indicator, a drop of 0·2 per cent. phenolphthalein is added to 10 c.c. of potassium chloride (about N/10) solution. A drop or two of dilute ammonia is now added until the solution assumes a slight pink colour. Silver nitrate is now run in, and as soon as the equivalent amount of silver nitrate has been added, just a drop of the titrating solution in excess causes the coagulation of silver chloride which separates out as a definitely bright pink mass leaving the supernatant solution colourless.

Quantitative measurements on the adsorption of phenolphthalein by the neutral and positively charged silver chloride bodies will be published in detail elsewhere.

Chemical Laboratories, R. C. MEHROTRA.
The University of Allahabad,
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ON THE OCCURRENCE OF PROTOZOA IN LAND-FILTERED SEWAGE EFFLUENT

IT has been shown that certain ciliate protozoa, particularly Vorticellids, are of special significance in the Activated Sludge Process and other artificial systems of sewage purification, and that these protozoa in the sewage tanks are originally derived from soil.[1-10] Further observations carried out during the last four years at