Dekalin shows three frequencies at 2922, 2892 and 2855 cm.$^{-1}$, only two of which were previously reported by Bonino and Cella, characteristic of the carbon hydrogen linking in the : CH_2 group and also one at 1447 cm.$^{-1}$ as reported by these authors. They are all present in the cyclo-hexane spectrum also reported by P. Krishnamurti. Six other lines which are present both in the cyclo-hexane and naphthalene spectra[7] have been obtained at 1362, 1256, 1166, 1024, 991 and 596 cm.$^{-1}$, and they also confirmed the previous authors' results.

Among the other new unrecorded frequencies given by dekalin are three weak lines at 2658, 443 and 376 cm.$^{-1}$, all of which are present in the cyclo-hexane spectrum according to P. Krishnamurti.

A full report of these investigations will be published shortly.

I am indebted to Sir C. V. Raman, in whose laboratory at Calcutta these investigations were carried on until I left Calcutta early in January 1933. During the past year, while working in Prof. O. W. Richardson's laboratory, King's College, I have been permitted by him to use the microphotometer, and by Dr. W. E. Williams to use the comparator, in measurements of Raman lines. It is through these facilities that I am now able to give the results of my investigation.

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[2] *Helv. Phys. Acta*, **5**, 174; 1932.
[3] Loc. cit.
[4] *Ind. J. Phys.*, **6**, 543; 1932.
[5] *Ind. J. Phys.*, **5**, 515; 1930.
[6] "Investigations of Infra-red Spectra". Carnegie Inst. (1905).
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Magnetic Properties of Organic Vapours

VERY little work has so far been done on the magnetic susceptibilities of organic vapours. Vaidyanathan's[1] experiments indicate that in the case of some liquids, such as benzene, carbon disulphide, pentane and hexane, there is considerable divergence between the liquid and vapour values. Sivaramakrishnan's[2] careful measurements by a new method[3] developed in this laboratory also gave a similar result in the case of benzene (a molar susceptibility of $79{\cdot}6 \times 10^{-6}$ for the vapour and $54{\cdot}6 \times 10^{-6}$ for the liquid).

In a recent note[4], we pointed out that these apparent differences were due to the fact that in the calculation of the molar susceptibility of the vapours, it was assumed that the vapours obeyed Boyle's law and that the susceptibility of 22·41 litres of the saturated vapour at N.T.P. would give the molar susceptibility. This assumption is obviously untenable. The correct method after determining the volume susceptibility of the vapour would be to calculate the specific susceptibility of the vapour, knowing the density of the vapour (available from the tables) at the specified temperature and pressure. We can thence calculate the molar susceptibility.

As an example, for benzene Vaidyanathan gives the molar susceptibility (in -10^{-6} units) for the liquid as 56, while his (uncorrected) values for the vapour, by two methods, are 83 and 74. When the results are recalculated by the above method, the values become 64·5 and 59·3; and Sivaramakrishnan's value (79·6) becomes 57·1.

For other organic vapours for which calculations have been made (details will be published elsewhere) the corrected molar susceptibilities agree equally well with the values for the liquid state. The only exception is carbon disulphide, for which the corrected molar susceptibility is still more than 30 per cent greater than in the liquid state; but here more accurate data are desirable, particularly in view of the fact that Vaidyanathan's results, by two different methods, differ by as much as 20 per cent.

It follows from the foregoing considerations that the calculated values of the molecular susceptibility depend on the accuracy of the density data. It seems to be desirable in new measurements to determine the density of the vapours directly along with the magnetic values.

In a recent letter in these pages, Jaanus and Shur[5] have mentioned that the difference of the magnetic susceptibility in the liquid and vapour states was mainly due to some mistake in the experimental work. We take this opportunity to point out that the differences are due mainly to certain untenable assumptions made in the calculations and not to experimental inaccuracies.

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[2] *Annamalai Univ. J.*, **3**, 48; 1934.
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[5] NATURE, **134**, 101, July 21, 1934.

Parasitism of *Rhizoctonia lamellifera*, Small

IN the years preceding 1929, much controversy existed regarding the parasitism of the group of fungi known collectively as *Rhizoctonia bataticola*. The differences of opinion held by various sections of workers, and postulated principally by Small, Gadd and Briton-Jones, were largely attributable to the use of the one specific name *bataticola* for what now appears to be a relatively large group of sclerotium-forming fungi. Papers published by Ashby[1] in 1927 and Haigh[2] in 1930 showed that *R. bataticola* was a polymorphic fungus possessing a pycnidial stage, *Macrophoma phaseoli*, and was apparently distinct from two other forms which Haigh styled strain *A* and strain *B*. In 1933, I showed[3] that strain *A* was physiologically and morphologically distinct from both strain *B* and *M. phaseoli*, and suggested that it should be designated by Small's original binomial *R. lamellifera*. The question of parasitism I did not touch upon.

For the past eight years I have been experimenting with the object of producing infection in young plants by various strains of these fungi, but until a year ago was unable to obtain any certain results with *R. lamellifera*. Last year, however, by growing grapefruit seedlings on certain agar media under aseptic conditions and inoculating with a grapefruit strain of *R. lamellifera*, I obtained 100 per cent 'kill' in 24 plants after 9 weeks. Control plants on sterile agar and on media inoculated with (*a*) *M. phaseoli* and (*b*) a saprophytic *Phyllosticta* sp. remained green until after the agar had dried out—a matter of six months.