The present note reports the results obtained from a physiological study of four cultures of *Fomes pinicola* Fr. obtained from four different hosts, namely, Douglas fir (*Pseudotsuga taxifolia*), white fir (*Abies grandis*), western hemlock (*Tsuga heterophylla*) and western white pine (*Pinus monticola*).

The results obtained show that these four strains of *Fomes pinicola* differ very markedly in (1) the characteristics of growth, (2) the rate of growth, (3) the extra-cellular enzyme activity, (4) the intra-cellular enzyme activity, (5) the effects produced in mixed cultures, (6) the growth on liquid media and (7) the nitrogen relations.

The wood-destroying properties are now under observation, but since these experiments require long incubation periods, the results will not be available for some time. A detailed discussion of the question of physiological specialization in *Fomes pinicola* will be published later.

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SERIES REGULARITIES IN THE SPARK SPECTRUM OF NITROGEN[1]

During the past decade the spectroscopy laboratory of the Bureau of Standards has been investigating the arc spectra of the elements as far into the infra-red as modern photographic methods will permit. This work has revealed the fact that certain lines appear on practically all the spectrograms regardless of what elements have been employed as electrodes in the arc. These lines were correctly attributed to the gases of the atmosphere in which the arc operated; and subsequent investigations of the spectra emitted by tubes containing oxygen, nitrogen, and argon have established the chemical origin of all the atmospheric lines which have been observed in the red and near infra-red regions. Preliminary wave lengths have already been published for these lines. (*Publ. Amer. Astron. Soc.*, 4, pp. 170 and 363; also, Merrill, *Astroph. Jl.*, 51, p. 236).

It is the purpose of this note to direct attention to the fact that the nitrogen lines which are observed most frequently and belong apparently to the category of sensitive lines, result from combinations of a triple p term with an s term, another triple p term, and with a five-fold d term. According to the alternation law of Kossel and Sommerfeld the spectrum of non-ionized nitrogen should exhibit series regularities of even structure, while the spectrum of ionized nitrogen, conforming to the displacement law, should exhibit structures of odd multiplicity. The series regularities given in the accompanying table are of odd multiplicity (quintet system), and therefore belong to the spark spectrum of nitrogen. In the table, the first column gives the combining terms of which the inner quantum numbers are designated by subscripts, the second column gives the wave lengths and intensities of the lines, the third gives the vacuum wave numbers, and the fourth gives the wave-number separations of the common triple p term. The separations of all the polyfold terms involved follow approximately Landé's interval rule. Details of a more complete analysis of the spectrum will appear in a subsequent paper.

Term combination	λ I. A.	ν	Δν
S_2P_3	7468.74 (5)	13385.5	
			47.1
S_2P_2	7442.56 (4)	13432.6	
			33.7
S_2P_1	7423.88 (3)	13466.3	
P_3P_3	8216.46 (5)	12167.4	
			46.7
P_3P_2	8185.05 (3)	12214.1	
P_2P_3	8242.47 (3)	12129.0	
			46.5
P_2P_2	8210.94 (2)	12175.5	
			33.9
P_2P_1	8188.16 (3)	12209.4	
P_1P_2	8223.28 (3)	12157.3	
			33.6
P_1P_1	8200.59 (1)	12190.9	
P_3D_4	8680.35 (2)	11517.1	
P_3D_3	8718.99 (1)	11466.1	
			46.7
P_2D_3	8683.61 (2)	11512.8	
P_3D_2	——	(11428.7)	
			46.7
P_2D_2	8711.87 (1)	11475.4	
			33.7
P_1D_2	8686.38 (1)	11509.1	
P_2D_1	8729.07 (½)	11452.8	
			33.8
P_1D_1	8703.42 (1)	11486.6	
P_1D_0	——	——	

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