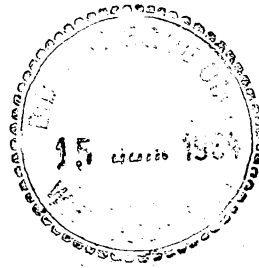


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NOTE ON PLASMODIUM OVALE IN SOUTH CAMEROUN

by

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Lacan's very interesting study (1962) of the incidence of P. ovale in French-speaking countries of tropical Africa induced us to report on our findings in South Cameroun, and particularly in the ex-pilot zone of Yaoundé.

Some of our observations confirm Lacan's findings, others deviate from them but we believe that our report may help to clarify our knowledge of this plasmodium whose individuality is still denied - or ignored - by some.

P. ovale was not identified in South Cameroun in 1961: the first cases were not recognized until the first quarter of 1962, and their number constantly increased (Table 1 and Fig. 1).

TABLE 1. NUMBER OF SLIDES EXAMINED,
NUMBER OF POSITIVES FOR ALL PLASMODIA AND NUMBER
OF POSITIVES FOR P. OVALE, BY QUARTER

Quarter	Slides examined	Positives for all plasmodia	Percentage of positives	Positives for <u>P. ovale</u>	Percentage of	
					slides examined	positive slides
1st	15 719	1 607	10.0	40	0.25	2.5
2nd	11 136	3 486	30.8	158	1.4	4.6
3rd	16 327	6 201	38.0	330	2.0	5.3
4th	12 145	2 881	23.7	302	2.5	10.5
Total	55 327	14 175	25.6	830	1.5	5.8
Bafia centre (5.12.62)	832	307	37.0	33	3.9	11.0

Nearly all our cases came from the forest zone. Nevertheless, it should be noted that a survey made in Bafia (wooded savannah) showed that the rate of 3.9% was higher than the general quarterly average (1.5%). In a forest village near Yaoundé (Essakpang), P. ovale was found on 16 out of 106 slides examined. There are therefore P. ovale "patches".

Examination of incidence by age-group shows that significantly more children aged 1-14 years inclusive (467) were affected than persons over that age (363).

FIG. 1

QUATERLY PERCENTAGE OF CASES OF *P. ovale*
IN RELATION TO:

Slides examined: —————
Positive cases (all plasmodia): - - - - -

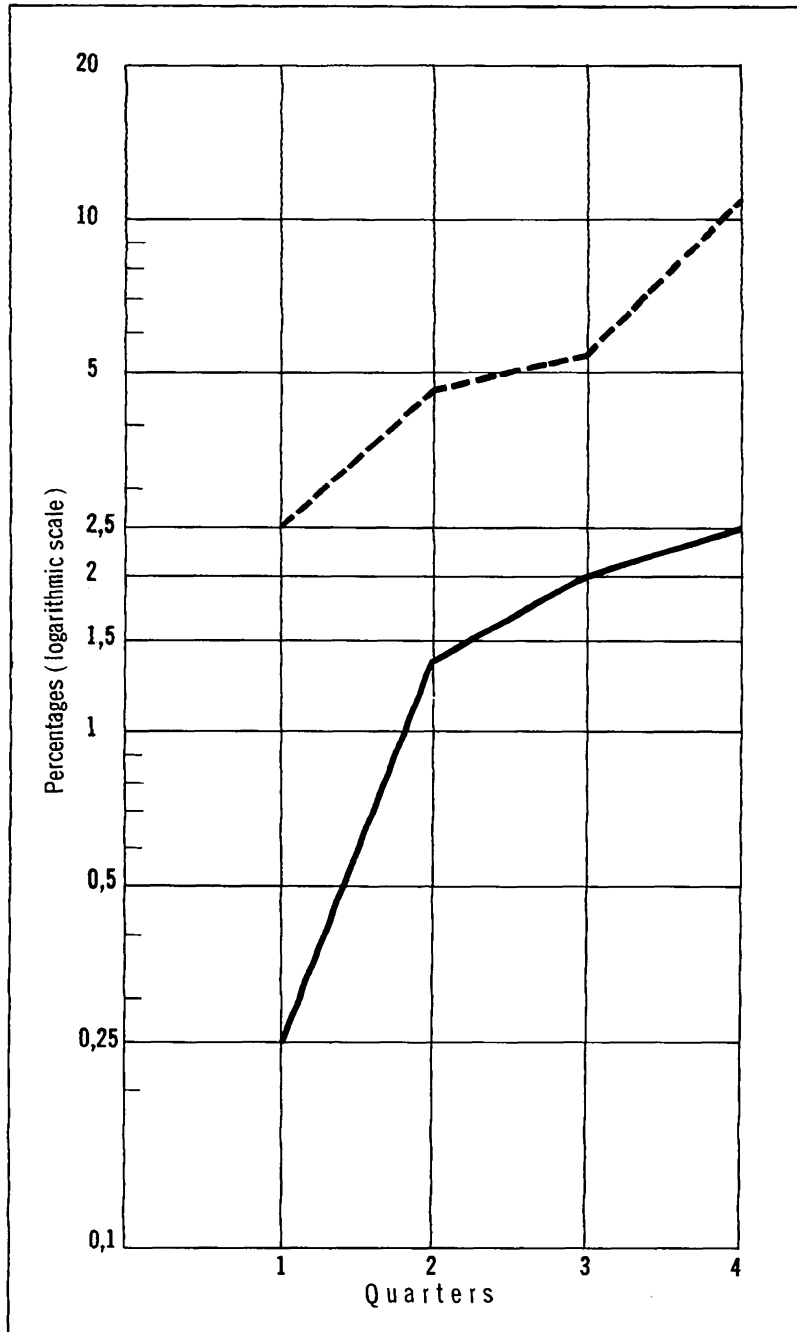


TABLE 2. QUARTERLY REPORT ON
P. OVALE CASES OBSERVED, BY AGE-GROUP

Quarter 1962	Age-group				Total
	0-11 months	1-4 years	5-14 years	over 14 years	
1st	0	9	14	17	40
2nd	5	29	63	61	158
3rd	13	49	111	159	330
4th	10	56	208	128	302
Total	28	143	296	363	830
Percentage of all <u>P. ovale</u> cases	3.4	17.2	35.6	43.8	

The age-group distribution is however remarkably uniform over the successive quarters: $\chi^2_{19} = 7$ (95% threshold = 16.9).

Table 3 shows the association of P. ovale with other plasmodia; in more than 50% of the cases it was associated with P. falciparum.

TABLE 3. ANNUAL FIGURES FOR OBSERVED
CASES OF P. OVALE BY AGE AND ASSOCIATION

Plasmodium	Age-group				Total	Percentage
	0-11 months	1-4 years	5-14 years	over 14 years		
<u>P. ovale</u> only	7	57	139	161	364	43.8
<u>P. ovale</u> + <u>falciparum</u>	21	83	153	197	454	54.8
<u>P. ovale</u> + <u>malariae</u>	0	1	2	2	5	0.6
<u>P. ovale</u> + <u>falciparum</u> + <u>malariae</u>	0	2	2	3	7	0.8
Total	28	143	296	363	830	

Diagnosis of P. ovale on well-prepared and well-stained slides is easy. In 70% of the cases, all the stages of evolution were found on a single slide. We agree in regard to the differential characteristics mentioned by Lacan, but we confess that certain definitely enlarged red blood cells, and schizonts with more than twelve nuclei, have sometimes left us perplexed.

Thick film diagnosis can be effected on the basis of the Schüffner granules which are generally visible on thick film - particularly on its edge, if the film is not evenly spread. Where there is the slightest doubt, it is advisable to verify the smears.

DISCUSSION

The principal points on which we are at variance with the findings of Lacan concern:

geographical distribution: frequency in forest areas;

age-group distribution: six weeks to 75 years.

It is very possible that the chief explanation of these difference - and particularly the second - is to be found in the immunity phenomenon mentioned by Lacan.

The particular conditions governing the area from which our samples were taken (ex-pilot zone in which the spraying operations were generally suspended in 1960 after more or less regular insecticide treatment over several years) may support the idea of gradually disappearing immunity - whence the P. falciparum outbreak which began about April 1961.

It is true that up to the end of 1961, the microscopists had not had their attention sufficiently drawn to this plasmodium, but during the following year the results from strictly supervised slides reflected a probable epidemiological picture.

We admit that the sample was not sufficiently well-balanced and that there was a shortage of first age-group infants in the rural zone. (In the consolidation

phase which we had theoretically reached, these infants were not a particularly reactive element.

However, in spite of this admitted "slant", it should be noted that the age-group variations as between the percentages of positives for all plasmodia and the percentages of P. ovale positives operate in the same direction and that the proportions are maintained.

Summing up, it seems that it would be very interesting to follow up this question:

at the purely epidemiological level, in the zone which is at present being re-treated with DDT, in the non-re-treated, ex-pilot zone, in the ex-"Compagne Sud" and in the wooded savannah;

at the entomological level (transmission of oocysts in small active foci) - A. gambiae being in the present case the only vector to be suspected;

at the therapeutic level: experimental treatment has been applied for several months and is still being applied (4-8 aminoquinolines).

It is too early to give the results.

CONCLUSIONS

P. ovale is observed relatively frequently in the forest zone of South Cameroun, and in all age-groups. It is probable that the very particular conditions in which these data were obtained (more or less complete disappearance of immunity) will not continue for long. (Either the region will be treated and transmission will stop - or at least it is to be hoped that it will - or immunity will be reconstituted and the incidence of P. ovale will return to what it was in the time of Languillon et al. (1955)).

ACKNOWLEDGMENTS

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