

suitable to their growth, as to that of all other vegetation, will produce them in the greatest abundance. This is not only true theoretically, but is capable of being proved. For instance, Pasteur has shown by sowing sterilized solutions with the dust of the air, that the air of the plains is more charged with spores than is the air of high mountains. But this method would only enable the number and character of such as are capable of multiplying in the culture solution to be known: hence, as Miquel says, 'the only accurate way of gaining an estimate is by counting them under the microscope; for, although by the latter method we run the risk of counting as germs, unfruitful spores and those killed by age and dying out, one does well not to forget that a large number of the seeds of lichens, of algae and mushrooms, though being perfectly alive, never multiply in *wort*, the juice of fruits and the broths where some moulds of the *Mucedines* and *Mucorines* disport and multiply themselves.' Following is Miquel's table on "Les Organismes Vivants de l'Atmosphère."

	Spores of Cryptogamia.			Mineral Particles.
	Young.	Old.	Pollen.	
1. In Summer.				
" Wet weather.	Numerous	Rare.	Frequent.	Rare.
" Dry "	Rare.	Frequent.	Frequent.	Abundant.
2. In Winter.				
" Wet weather.	Rare	Rare.	None.	Rare.
" Dry "	None.	Frequent.	Very Rare.	Abundant.
3. In Hospitals and houses.	Very Rare.	Frequent.	Very Rare.	Very abundant
4. In Sewers.	Numerous.	Rare.	None.	Rare and homogeneous.

"We thus see that there are definite laws regulating the number of spores and their vitality. In the external air in summer we have abundance of pollen and of spores, new or old, varying according to the degree of dampness or dryness of the atmosphere; while, as opposed to this, the pollen and new spores are rare in houses and hospitals, although old spores may be abundant. Again, in the sewers, new spores are numerous while the old are rare, and pollen is wholly absent. The remarks here made concerning the spores of Cryptogamia must, as far as we can judge from the nature of this whole class of plants, and from analogy, apply equally to those of *Bacillus Malariae*. The next point is that their number must vary with changing conditions.

"How delicate is the balance which regulates the amount of bacteria that are carried into the air is seen in the facts which repeat themselves again and again in Miquel's tables. A moist season followed by a dry one of sufficient extent to allow of the drying out of such surfaces, always shows a proportionate increase in the bacteria of the air; but let the drought continue long enough to cause a drying out of the germs, by the absorption of their water by the air, and their amount proportionately decreases. It will readily be seen, however, that such surfaces as those along streams dammed back will always have a new germ producing surface, since no matter how long the drought continues there will always be the wholly dried surfaces and then every degree down to the surface covered with water. Hence it is that, on the assumption of the zymotic origin, of malaria, there will always be a never failing hatching place for its germs along such streams; and there, under such circumstances we would have an alteration of the effective germ-producing period noted by him as increasing after rain, but soon lowering with continued dry weather—and which his statistics shew to be the rule at Montsonris. Under such circumstances the lateral distribution of microbes from their source of origin will depend, (a) on the amount of their production; (b) on the rapidity with which they are dried out in a fervid summer atmosphere; and (c) on the breadth and