LETTERS TO THE EDITOR.

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Insect Parasites on Trees.

THE note in NATURE of April 11 (p. 144) about the ravages of insect parasites upon the chir pine (*Pinus longifolia*) in the Himalayas suggests a consideration which, I think, is not enough present to foresters and planters in this country. I am too destitute of biological or physiological knowledge to venture an opinion upon the causes which lead to the excessive multiplication of parasites, whether animal or fungoid, upon animals and plants whereof the vitality has been impaired by some other agency; but the phenomenon must be familiar to most people, though it is generally wrongly interpreted. Normally vigorous organisms may, and do, entertain a reasonable number of parasitic guests without appreciable loss of vigour; but these guests seem to bide their time until the host is weakened by accident or disease, when they display a surprising amount of latent fecundity. In the case of the chir pine, the opportunity occurs when the vitality of the tree is lowered by tapping for resin; in other words, when it is depleted of its protective juices, the diminution of which gives easy access to the Platypus larvæ.

To an analogous process may be traced the prevalence of larch canker, which, during the last fifty years, has brought such heavy loss upon owners of woodland, having previously attracted no attention whatever from foresters. It has now become the most widely destructive tree disease in Britain. The hostile agent in this case is a pesizoid fungus, *Dasycypha calycina*, the ravages of which generally manifest themselves on poles from seven to fifteen years old. Many of these die or become hopelessly deformed, and all attempts to arrest the evil have hitherto proved futile, although recent works on forestry bristle with recommendations on the subject. Yet I am convinced that planters have the remedy in their own hands—at least as regards planting in the future.

The fungus Dasycypha is no new creation; it has always found a home on the larch. Dr. Hartig found traces of it in Swiss larch of 100 years' standing. I have found it also on Corsican and Scots pines, where it is quite innocuous. The European larch has succumbed to its attack in Great Britain because, under the conditions to which foresters too often expose them, the young plants receive a severe check at the critical time of planting, and do not recover strength before the mycelium has penetrated the tissues so far as to hinder or prevent recovery.

This check is the result of the drying of the roots during transport from a distant nursery. There is Dasycypha in the noble larch woods of Dunkeld, but no cankered larches. The parasite has never had a chance of overcoming its host, because these trees were all reared from seed in home nurseries and planted out straight away.

The Japanese larch (*Larix leptolepis*) is very nearly akin to the European species, but is distinguished by its immensely superior vigour in youth. Hence, although the characteristic larch parasites—Dasycypha, Chermes, and the large larch sawfly—may all be found in a plantation of Japanese larch here, the trees are none the worse for their presence.

The lesson to be learnt by our foresters seems to be that although the native climate of the European larch is very different from that of the British Isles, it adapts itself readily to British conditions, provided that care be taken to protect it from any check to its vitality, and that they may treat with indifference prescriptions against this and other tree diseases for exterminating parasites or checking their attacks, such as hand-picking, smoking, spraying, &c., all of which are childish in their futility and prohibitive in expense when applied to large woodland areas.

Monreith, April 15. HERBERT MAXWELL.

The Propagation of Long Electric Waves during the Solar Eclipse.

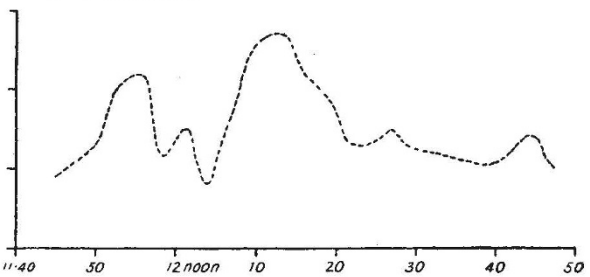
IT is now common knowledge that the long electric waves employed in wireless telegraphy over great distances appear to travel better during the hours of darkness than in the daytime. It is known besides that the natural electric waves produced by atmospheric electrical discharges—which are heard in the telephones of receiving stations as clicks or scratching noises, and are called "strays" or "X's" by those engaged in wireless telegraphy—are also propagated better in darkness than in light.

These differences between day and night propagation suggested to me that observations of the strength and number of strays, and of the strength of signals, during the solar eclipse of April 17, might prove to be of interest. Accordingly a record of strays and signals was made at my laboratory in London during the progress of the eclipse. The apparatus was set so as to receive signals of wave-length 5500 metres, which is approximately the wave-length of the signals emitted from the Marconi Transatlantic station in Ireland.

About the time of the eclipse strays were fairly numerous. The table below is a convenient summary of them. The number entered under each of the times was obtained by making a sort of rough time-integral of the number and intensity of the strays heard from half a minute before to half a minute after the beginning of the minute indicated.

Time 11.46 a.m.	47	48	49	50	51	52	53	54	55				
Strays 10	10	11	12	13	17	21	20	21	22				
Time 11.56 a.m.	57	58	59	12'0 noon	1	2	3	4	5	6	7	8	
Strays 22	17	12	12	13	15	14	9	8	12	14	17	23	
Time 12.0	10	11	12	13	14	15	16	17	18	19	20	21	
Strays 25	24	26	27	27	27	24	22	21	20	19	17	14	
Time 12.22	23	24	25	26	27	28	29	30	31	32	33	34	35
Strays 13	13	13	13	14	15	14	13	12	12	13	13	11	12
Time 12 36	37	38	39	40	41	42	43	44	45	46	47		
Strays 12	11	11	10	10	10	12	14	14	14	12	10		

These results are exhibited in the curve, with the times as abscissæ.



The message-bearing waves from Clifden were brief and irregular, so no measurements of their intensity were obtained; but it was very noticeable that they were loud when the strays were loud, and *vice versa*.

The observations show that on the whole the dark-

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