

No one can doubt the great advantages of Dr. Wehnelt's instrument in reducing the time of exposure of photographic plates, the brilliancy and steadiness in the fluorescent screen, not to mention its cheapness. The question of disadvantages having been raised, such as control of the instrument, destruction of tubes, &c., I made a few experiments to see how far such would affect its utility. My experiments were made with induction coils of different sizes, the largest being a 28-inch spark, and in each case the principles involved seemed to be the same. Firstly, we can vary the effects in the tube by increasing or diminishing the voltage to the primary coil. Secondly, the current is easily controlled by difference in proportion of the size of the electrodes. Thirdly, the strength of the fluid in which the electrodes are immersed affects the result. Fourthly, by the distance between the electrodes in the electrolyte changes are brought about. Fifthly, variations are got by the number of active electrodes. By modifying these we can vary the length of the spark, also its frequency and thickness, and it naturally follows that we can make use of them in exciting Crookes' tubes. In fact, so easy is it to arrange matters that I have been able to excite small and large tubes of different vacua with perfect safety even when using a large 28" spark coil. So far, therefore, from being afraid of its destructive power upon the anti-kathode or Crookes' tubes generally, I am convinced that the new interrupter will be very easily controlled. I may add that some workers are inclined to think that large coils will no longer be required, but the answer depends entirely upon the work to be done. What we already do know, and what is of greater importance, is that coils of any size can do what was beyond their range in the past—a fact of great value where portability is of consequence, as in hospital work or to the army-surgeon on the field.

So far I have therefore been quite able to confirm everything promised by Dr. Wehnelt. Photographs taken by me of the deep-seated tissues of the body have been obtained with very much shorter exposures than by any other means of interruption. Further, examination of these deep-seated structures has been made much easier by the greater brilliancy and steadiness of the fluorescent screen.

Another question sure to be raised once more by this new instrument is which is the best instrument for X-ray work judged by the comparative advantages and disadvantages of induction coils and influence machines. Hitherto one of the great advantages of the latter has been the brilliancy and steadiness of the illumination of the screen, but this difference may be said to have disappeared with the advent of Dr. Wehnelt's discovery. When the question of the best transformer was discussed at the Röntgen Society last session, I could not see my way to take any side, believing then, as I do still, that each transformer has its advantages and disadvantages. It would possibly be as easy to say whether a gas, oil, or steam engine should be chosen to do a particular piece of work. At that meeting I stated that when we come better to understand coils and influence machines, we shall probably do the same work with either. The selection of the instrument to excite Crookes' tubes in the future will probably be decided by such questions as portability, the primary force at the disposal of the operators, such as batteries, street mains, or mechanical power.

179 Bath Street, Glasgow,
March 5.

JOHN MACINTYRE.

To Calculate a Table of Logarithms.

ON the 23rd ult. you were good enough to publish for me a short account of a method of calculating a table of logarithms which any schoolboy might employ. I find that this method is described in a book published a few days ago, "Measurement and Weighing," by Edwin Edser, an associate of this college. The method was used by Mr. Edser in teaching students of the Chelsea Polytechnic. To find that young teachers are working in the spirit evidenced by such an exercise, gives me many times more pleasure than any that I could derive from credit for priority.

JOHN PERRY.

Royal College of Science, South Kensington, S.W.,
March 1.

Probable Weather Conditions in Spain during the Total Solar Eclipse of May 28, 1900.

THINKING that some information about the climatological conditions of the Spanish towns situated in the track of the shadow during the total solar eclipse of May 28, 1900, may be

welcomed by the readers of NATURE, I have collected the few available observations made at meteorological stations situated near the path. Only two are in the limits of the central shadow: inland, Albacete; and Alicante, on the sea-shore.

Weather Chances towards the End of May, deduced from several Years of Observation.

Towns	Barometer	Temperatures			Wind Direction	Velocity	Days of				Rain mm.	Humidity per cent.
		Max.	Min.	Mean			Clear	Cloudy	Overcast	Rain		
Albacete ...	702.5	21.0	9.3	15.9	S.E.	5	9	15	9	8	49	66
Alicante ...	759.4	25.3	11.4	18.9	S.E.	5	15	14	3	4	28	76
Caceres ...	719.2	22.8	10.0	16.4	S.W.	4	8	10	4	11	114	62
C. Real ...	707.2	23.7	8.5	14.9	W.	4	10	11	10	9	50	62
Murcia ...	755.6	25.1	12.5	19.0	S.E.	5	8	16	3	5	30	58

The Spanish astronomer, Mr. Landerer, has drawn up the times of contacts for the towns expressed in the following table. (Madrid mean time.)

Localities	External contacts	Totality			
		Contacts			Duration
		h.	m.	s.	m.
Oporto ...	h. m. s.	2	3	28	0 55
		4	34	37	
Ovar ...	h. m. s.	2	3	30	1 33
		4	35	9	
Vizeu ...	h. m. s.	2	7	42	1 31
		4	38	28	
Plasencia ...	h. m. s.	2	18	48	1 29
		4	47	36	
Navalmoral ...	h. m. s.	2	21	44	1 28
		4	50	20	
Argamasilla ...	h. m. s.	2	35	59	1 22
		5	1	58	
Albacete ...	h. m. s.	2	43	31	0 40
		5	7	26	
Tobarra ...	h. m. s.	2	45	31	1 20
		5	9	6	
Novelda ...	h. m. s.	2	49	40	1 18
		5	13	15	
Elche ...	h. m. s.	2	50	18	1 19
		5	13	56	
Alicante ...	h. m. s.	2	51	25	1 12
		5	14	43	
Santa Pola ...	h. m. s.	2	51	9	1 18
		5	14	29	
Argel ...	h. m. s.	3	11	47	1 9
		5	31	41	

AUGUSTO ARCIMIS.

Instituto Central Meteorológico, Madrid.

A Remedy for Bookworms.

REFERRING to the letter from Mr. J. Ewen Davidson on this subject (NATURE, vol. lix. p. 126). In my experience of keeping books in Fiji and various parts of Australia, I have only had to contend with the attacks of rats, cockroaches, "silverfish" (*Lepisma*), and a small boring beetle; all of which attack the binding, probably for the sake of the starch paste, &c.

The solution of corrosive sublimate, recommended by Mr. Davidson, will undoubtedly prove *permanently* effective without the thymol.

Some objection may, however, be taken to the use for this purpose of a powerful poison like corrosive sublimate.

I have attained the same end by giving the bindings a dressing of strong shellac in spirit. This is easily applied by means of a soft brush, and dries quickly, when it is scarcely noticeable even on fine bindings.