also AC potentials, this observation, of course, stands in distinction from what happens when the TC secondary directly contacts the electroscope - here, the 45° deflection can in no way be construed as indicative of the potential, RMS or not, of the source: 1.2 kV cannot account for the rated 50 kV of the coil.

To explore further the basis of this phenomenon whereby the TC appears to induce positive charging of vicinal metallic bodies, we negatively charged our standard electroscope to a 70° deflection and placed it, equipped with a needle pick-up and with the case floating, at a distance of 1 m from the BD10A coil, set at 6 clicks (room RH=35%). We proceeded then to measure the effect of the coil radiation upon the leakage rate, as shown by the closed circles curve in **Fig. 2A**. Even at distances of 80-100 cm, the coil greatly accelerates the leakage rate of the electroscope. And, as expected, the rate accelerates more as the distance from the TC decreases. In the process, we also observed spontaneous positive charging of the (discharged) electroscope, and measured the rate of the same, as shown by the open squares curve in **Fig. 2A**. At 80 cm of distance the negatively charged leaf falls at a rate of 124,615 V/h (1800 V drop from 70° to 30° in 52 seconds). At 50 cm, the leakage rate has increased nearly fourfold to 462.9 kV/h. However, at this distance, once the electroscope is discharged, no noticeable charging survenes. But if the electroscope is moved to a 30 cm distance from the BD10A tip, then, once it becomes fully discharged, it begins to charge, and in 25 seconds is seen to accumulate a positive charge corresponding to a 20° deflection, at a rate of 82.1 kV/h. At this distance, the rate of discharge of the negatively charged electroscope increases nearly twofold, from 462.9 kV/h to 810 kV/h. At 20 cm from the source, the rate of discharge of the negatively charged electroscope increases to 2.16 MV/h, whereas the rate of induced positive charging increases to 97.9kV/h, to a maximum deflection of 25° (680V potential). Finally, at a a distance of 10 cm, the positive charging reaches, in a pulsatory fashion, a deflection of 35° (950V) in 25 seconds, at a rate of 136.8kV/h. At the same distance, the rate of fall for the leakage electroscope is approximately 2,700 volts per second. At 7 cm, the rate of fall is too fast to be accurately determined, and the positive charging rate increases to 726 kV/h, for a final deflection of 45° (1210V).

The maximal potential achieved by proximal positive charging of the electroscope as a function of the distance from the source is shown in **Fig. 2B**. As shown there, no observed positive charging of the electroscope occurs at distances of >50 cm from the TC. Repetition of the experiment with an initially positively charged electroscope demonstrates that up until ca 7 cm of distance from the coil, the latter does not affect the seepage rate, which remains flat throughout. At less than 7 cm of distance, the leaf then falls from the initial deflection (70°) to 45°.

It should also be noted that, once the spark-gap tip of the BD10A is removed from the terminal of the secondary, the loss of charge from the negatively charged electroscope is slowed down through the entirety of the distances examined, and the positive charging of the electroscope only occurs at ca 10 cm from the tip. This suggests that the spark-gap tip considerably expands the prox-