

rod of iron eight or ten feet in length, sharpened gradually to a point like a needle, and gilt to prevent rusting, or divided into a number of points, which would be better, the electrical fire would, I think, be drawn out of a cloud silently, before it could come near enough to strike; and a light would be seen at the point, like the sailors' corpuzante [corposant: St. Elmo's fire]. This may seem whimsical, but let it pass for the present until I send the experiments at large. Here is Franklin's earliest suggestion of the lightning rod, made when he seems not yet to have thought of the need of a ground wire.

Now he turned his attention to thunder-storms—which he called thunder-gusts—and wrote out a new hypothesis for Collinson which, though undated, must belong to the first half of 1750. Franklin then supposed that clouds formed over the ocean had more electricity in them than clouds formed over the land, and that when they came close enough together their different charges were equalized by the passage of lightning between them. "If two gun barrels electrified will strike at two inches' distance, and make a loud snap, to what a great distance may 10,000 acres of electrified cloud strike and give its fire, and how loud must be that crack?"¹² When clouds came close to the earth their electricity was discharged through "high hills and high trees, lofty towers, spires, masts of ships, chimneys, etc., as so many prominencies and points."¹³

By 29 July 1750 Franklin was ready to draw up for Collinson, who had sent the first electrical tube, and Thomas Penn, who had sent the Library Company "a complete electrical apparatus," a summary of the *Opinions and Conjectures, concerning the Properties and Effects of the Electrical Matter, Arising from Experiments and Observations, Made at Philadelphia, 1749*. Now, nine months after he had privately determined to make his great experiment, he publicly proposed it, through Collinson to the Royal Society. Let the experiment be made. Make the truth useful to mankind. "Nor is it of much importance to us to know the manner in which nature executes her laws: 'tis enough if we know the laws themselves. 'Tis of real use to know that china left in the air unsupported will fall and break; but how it comes to fall, and why it

CHAPTER 6

breaks, are matters of
them, but we can pr

Now repeating his
vided also for "a win
ground, or down rou
side till it reaches
whether the clouds t
would propose an ex
conveniently. On th
kind of sentry box .
trical stand [an insu
iron rod rise and pas
twenty or thirty feet,
stand be kept clean a
are passing low mig
drawing fire to him f
be apprehended (tho
stand on the floor of
rod the loop of a win
holding it by a wax l
will strike from the r

Franklin did not l
dangerous such an e
had two days before
plans. "Being about t
glass jars, containing
phials, I inadvertentl
body, by receiving the
while the other held
jars. The company l
another, I suppose occ
say that the flash was
yet, my senses being
heard the other; nor c
felt what I know no
throughout my whole
as well as without; aft