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## The Light Electric

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# The Light **Electric**

**Zu Beginn der Elektrifizierung wurde elektrisches Licht auf drei verschiedene Arten erzeugt. Durchgesetzt hat sich letztendlich die Glühbirne, die erst heute langsam verdrängt wird.**

Julius Maier's 1886 book on Arc and Glow Lamps reminds us just how ready we were for a new technology. Electricity then created light in one of three ways. First, arc lighting: Electric current jumped a *gap* between two end-to-end *carbon rods*, creating a bright light. Second, carbon elements touched so their ends could glow brightly while they slowly burned away.

The third way was to let electricity flow through a resistor so it glows white hot. We call that *incandescent* lighting. It's how almost all our *light-bulbs* worked – until we began replacing them with bulbs that use fluorescent gases instead of *filaments*.

Maier calls the second two kinds glow lamps, but he has a lot more to say about arc lights. Carbon-arc lights are almost gone today; but I still remember waiting in a dark movie theatre. Then, a *faint* pop as the arc was struck in the projector and the magic could begin. Projectors still use arc lighting; but now *tungsten* electrodes fire in gas-filled tubes.

Incandescent lamps were about to *blot out* carbon arcs, just as carbon arcs were then replacing much of our oil and gas lighting. Maier recognizes the many superior features of light bulbs, but *habit* carries him along as he lovingly explains arc lighting.

When he *traces* the history of incandescent lighting, he makes no mention of Sir Humphry Davy's glowing carbon filament in 1800. But he does describe several patents for glowing platinum, iridium, and carbon in the 1840s. He tells how incandescence then *lay fallow* until another *flurry* of patents during the 1870s. Toward the end of that period, Edison gained two patents for his carbon filament lamps. British inventor Joseph Swan had made filaments of *carbonized* paper and demonstrated his light bulb before Edison. When Edison went commercial with his lighting system, Swan held the better patent, so Edison took him into partnership.

Maier gives tables of light-bulb performance made at the 1883 Vienna Exposition, for light bulbs of twelve inventors. Swan's bulbs hold a *slight edge* over Edison's, but several others had, by then, *outclassed* them both.

	was ready
	replace ... area
	designated ... give
curve	uses
	alarmed
opening	
graphite sticks	
	enormous
glowing	
*see list	
strings	
quiet	
*see list	
erase	
routine	
follows	
weren't used	
outbreak	
graphite coated	
small advantage	
surpassed	

So I take in Maier's snapshot of this moment when our way of life *was poised* to change. In the end, he says that the glow lamp is unlikely to *displace* arc lighting – that its “proper *sphere* of activity ... begins where that of the arc lamp ends; it is *destined* to *furnish* such smaller quantities of light which the arc lamp cannot give, and which are required for domestic *purposes*.”

Well, he got the last part right. He's also *dismayed* that we're being so slow to adopt electric lighting. He finishes with an Italian saying: *Chi va piano va sano e va lontano* – He who goes slowly, goes further. Well, technological revolutions are like that. Maier couldn't see just how *vast* and rapid the electric lighting revolution was – or how very far it was about to take us. ■

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<i>arc</i>	Bogen
<i>be poised, to</i>	bereit sein
<i>blot sth. out, to</i>	etw. ausradieren
<i>bulb</i>	(Glüh-) Birne
<i>carbon</i>	Kohlenstoff
<i>carbonise, to</i>	verkohlen
<i>destine, to</i>	bestimmen, ausersehen
<i>dismay, to</i>	erschrecken
<i>displace, to</i>	verdrängen, ablösen
<i>edge</i>	hier: Vorsprung
<i>faint</i>	schwach
<i>filament</i>	Faden, Faser
<i>flurry</i>	Unruhe, Hast
<i>furnish, to</i>	bereitstellen, liefern
<i>gap</i>	Spalt, Abstand
<i>habit</i>	Gewohnheit
<i>incandescent</i>	glühend
<i>lie fallow, to (lay, lain)</i>	brachliegen
<i>outclass, to</i>	deklassieren, übertreffen
<i>purpose</i>	Zweck
<i>rod</i>	Stab
<i>slight</i>	gering, leicht
<i>sphere</i>	Bereich, Sphäre
<i>trace, to</i>	verfolgen
<i>tungsten</i>	Wolfram
<i>vast</i>	riesig