

EARLY ELECTRO-DYNAMISM: THE CABINETS OF DAVID ROENTGEN

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ABSTRACT - A late 18th century neoclassical cabinet, probably by David Roentgen of Paris, was recently dismantled during conservation. During treatment several discoveries were made which, the authors believe, will revolutionize our understanding of the organo-electro-mechanical achievements of 18th century craftsmen and scholars.

THE CABINET

Although not signed by Roentgen, from details of style and construction the cabinet is undoubtedly from his atelier and dates from the late 18th century. It has a mahogany carcass overlaid with tortoise shell and brass in the style most commonly called bouille-work.⁶ It was at first assumed to be just a writing desk, and was catalogued as such until the discoveries of its true intention described here.

THE DISCOVERIES

Control

On cleaning the brass and tortoiseshell inlay we loosened several noted areas which, once lifted for cleaning, proved to have fine copper filaments soft-soldered to their undersides. Furthermore, in several places adjacent areas of brass were bridged by these filaments. In all cases the underlying wood had been hollowed out. Further mysterious components were found attached to the underside of the brass in the same way. These included layered wads of wax-impregnated paper and thin silver foil, and granules of a fairly high grade graphite. In one instance the copper filaments had been wound tightly around a graphite granule. Once the bouille-work was relaid, this whole delicate tracery of elements was quite invisible.

Tuning

Stimulated by these discoveries, we carried out radiography on all decorated surfaces

⁵ The senior author isn't hiding in Acre.

⁶ As juxtaposed with bouille-work, usually a cheap chablis or anything from Orvieto.

of the cabinet. This intense examination was rewarded by the discovery of a cavity below the brass work in the region of the writing surface. This cavity was connected by a tiny drilled hole to the inkwell. In the depression an array of four sealing wax terminated paired traces was found. Microscopic examination revealed the dermestid-chewed remains of insect legs protruding from the wax. The species were determined to belong to, *Blattella germanica* (German cockroach), *Blatta orientalis* (Oriental cockroach), *Monomorium pharaonis*, (Pharaoh's ant), and *Xylocopa virginica* (Carpenter bee).



Micro-radiography of these remains showed two fine wires inserted into the tibial levator and depressor muscles in the femur of the excised legs. Local chloride erosion of the brass indicated the application of some ion-rich solution, and this assumption was given weight by the discovery of traces of sodium, calcium and potassium chlorides, and sodium bicarbonate in the cavity. Such traces are consistent with the periodic application of an isotonic saline solution such as Kreb's or Ringer's.

Figure 1. Röntgenographische Untersuchung of a section of the writing surface showing the tracery of components hidden below the veneer.

Power

Another channel was found connecting the ink well to a cavity containing two thin pieces of metal foil, again soldered to fine copper filaments. Analysis showed these metals to be copper and zinc and revealed their surfaces to be etched in a way consistent with the application of an aqueous electrolyte. It was apparent that introduction of fluid into the ink well would complete the circuit. Thus was formed a rudimentary, but nonetheless effective battery producing some 1.2 volts.

Transmission

Below the brass and tortoiseshell inlay on both sides of the cabinet, and insulated from them by glue-impregnated paper, there were extensive loops of fine copper wire, giving an estimated total length of 20 to 25 meters. The ends of these wires had been passed through small holes drilled in the thickness of the join with the writing surface, and led in the direction of the other components.

CONCLUSIONS

Given all the above evidence, we modestly propose that this delicate arrangement of what can only be called 'circuitry' performed as a tuning indicator and transmitter for carrier frequencies, broadcasting on the Masonic/Templar network throughout Europe, Asia, Africa and the nascent Americas. Unfortunately, the nature of the signals remains a mystery, but it doubtless consisted of interrupting the carrier (pulse) after locking onto the frequency at pre-set times for transmission (lunar cycles).

That these signals were linked with espionage is beyond conjecture, and accords well with known details of the Roentgen family history; Abraham, David's father, worked closely with the Moravian Brotherhood (a very suspicious sounding organization) doubtless establishing clandestine connections which his son developed and expanded. Among his clients were Marie-Antoinette, Pope Pius VI, and Catherine the Great of Russia. It remains to be shown whether these worthy patricians were party to the trans-European proto-electronic network established in their midst, or whether they were simply gulled by moles in their support staff. The latter is likely to be the case, otherwise there would be no need for the intricate secrecy of concealed components and the silence which history has hitherto cast over this technology. The reader need not be reminded that furniture such as that produced by the Roentgen workshop could only be afforded by wealthy heads of state, so the practice of concealing advanced technology under its surface no doubt contributed to the secret power struggles of those who truly controlled the destiny of kings and princes.

The colloquial term 'bug' survived into the mid 1900s to refer to Morse operator's equipment, and continues to this day when referring to clandestine methods of appraising oneself of information by electronic means. The system we describe here, together with the above incontrovertible historical data, certainly appears to have been widely operable in the 17th and 18th centuries. The literature reflects and supports this contention:

Sit and be quiet; here are kingly bug-words.

(J. Ford, 1586-1639, *Perkin Warbeck*)

Analysis of this quotation reveals the key: *sit* indicates the pose adopted when sending a message (i.e. in front of the desk); *be quiet* indicates the subversiveness of the activity; and *kingly bug-words* are obviously the messages transmitted by electronicised insect parts between heads of state.

The lack of amplification circuitry in the cabinet under examination may prove the clandestine nature of the network, but it may also be that news of the discovery of parallel cicada speakers described by Alexander Pope had not yet reached Paris:

Yet let me flap this bug with gilded wings.

(A. Pope, 1688-1744, *Epistle to Dr. Arbuthnot*)

Pope's reference can only refer to a bio-electro-optical device, similar to a ballistic galvanometer which would operate at, for that historical period, ultra high frequencies. The historical timing is synchronous with Grey's discovery in 1733 of the electret properties of insect exoskeletons. This in turn indicates a large amount of established traffic on the system. Pope continues:

This painted child of dirt, that stinks and stings
Whose buzz the witty and the fair annoys.

Given the conflicts of the time, the implications of this urgent statement are ambiguous, though not astounding. It implies, surely, application of the technology to refer onerous news, or use by competing, even revolutionary forces. It is not coincidental that both Roentgen and Napoleon were almost contemporaries. Either way, the statement quoted above foreshadows modern electronic warfare.

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