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## THE ORIGIN OF THE HECTOGRAPH by Dale Speirs

The letterpress and the linotype, and many other kinds of printing machines, are well documented, but the hectograph's origins are obscure. The device itself is rapidly being forgotten, as few fans are left who ever used one. I was first prompted to research the history of the hectograph when I came across a remark by Harry Warner Jr in his book ALL OUR YESTERDAYS (page 23): "The inventor of the hectograph for obvious reasons has concealed so well all trace of his identity and details of its discovery that I have been unable to determine the date on which he unlocked this secret of nature. But the devilish things must have been available before the turn of the century."

Also known as the hektograph, chromograph, or velocigraph, a good definition of it comes from the 1894 edition of AMERICAN DICTIONARY OF PRINTING AND BOOKMAKING: "A method of producing copies from a compound of glue and glycerine. A thin, even slab of this is cast, upon which the paper to be copied is laid face downwards. When it is judged that the sheet has been there long enough it is lifted, the bulk of the ink having soaked in the meantime into the upper layer of the glue and glycerine. Other sheets laid upon it and gently pressed take off enough ink to secure a perfectly legible facsimile, and this the compound continues to do until from twenty to fifty copies are ready. In some cases even one hundred copies have been printed."

The earliest original source I have found is in the August 18, 1879, issue of THE TIMES of London. A note on page 10 reads: "Chromographed Documents And The Post. For merchants and others who employ any one of the new copying instruments which, under various names — the chromograph, hectograph, velocigraph, &c — have recently been so widely adopted, it may not be superfluous to mention that the German Post Office has just given formal notice that copies of documents taken by these processes are treated and charged as letters, and are not conveyed in Germany at the cheaper rates of postage applying to books, circulars, or newspapers."

THE PRINTING TIMES AND LITHOGRAPHER of February 15, 1880, supplies the following: "Letter-copying Process. Herr Adler has communicated to the Vienna Photographic Society a multiplying process based upon the use of the glue plate, consisting of gelatine, glycerine, and water (though the last-mentioned ingredient is present in a smaller quantity than usual), used in the hektograph and other similar processes. For writing or drawing Herr Adler uses a concentrated solution of alum, to which, in order to render the writing or drawing visible upon the paper, a few drops of some aniline colour are added. Before laying the writing or drawing upon the gelatine surface pass a damp sponge over the latter, and allow the moisture to sink in for a few minutes, so as to have a greater effect upon the alum. Then lay the written side of the MS. downward upon

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the gelatine, and, after the lapse of a few minutes, on removing it the writing will be found reversed and eaten into the gelatine film as if it were engraved. By means of an India-rubber roller a little common printing-ink is spread over the plate. The ink is absorbed by the lines sunk by the alum, and rejected by the rest of the moist surface. The paper to be printed is laid down upon it, and smoothed over by the flat hand. When removed this paper will have upon it the first impression of the writing or drawing. For each succeeding impression, the plate must be inked, as in lithography, with an India-rubber roller. It is alleged that a considerable number of impressions can thus be taken."

The definitive history of duplicating machines is the 1972 book THE ORIGIN OF STENCIL DUPLICATING by W.B. Proudfoot (publ. Hutchinson of London). He makes the point that, contrary to what people believe, commercial hand-copying on a large scale was not done away with in the 1400s and 1500s as the printing press spread from country to country. It is not practical to print business correspondence, and as carbon paper and typewriters were not successful until the 1870s, handcopying continued 400 years after the printing press. Proudfoot writes that in the late 1870s the hectograph "... was probably more popular at that time in Germany where the dyes were made and where its introduction was associated with the name of Alexander Schapiro. In Germany the process was originally known as the Schapirograph." Proudfoot goes on to talk of William Ritzerfeld, founder of the Ormig Company, Germany, "the original home of the hectograph". Later in the book when Proudfoot is writing of David Gestetner: "1877 saw him back in Vienna, where he went into business with his Uncle Leopold making and selling the hectograph process. Uncle Leopold was a glue and gelatine manufacturer." Gestetner's first patent was for a modification of the hectographic method.

It appears then that the hectograph was invented in Germany or Austria circa the 1870s. Very likely it was simultaneously invented by several people at once, developing out of ideas in circulation about using a pan of gelatin and moistening paper to pick up the ink.

SF fans are used to thinking of the hectograph only for its hobby use, but it was first an aid to business, then popular with revolutionaries in putting out underground papers. In a 1983 article by M.V. Demchenko in UKRAINS'KYI ISTORYCHNYI ZHURNAL is an account of how Marxism was spread by Kiev students in 1889: "So eager were the newly converted to spread the word of Marx that they copied his publications by hand or hectograph and circulated copies throughout the region." The OXFORD ENGLISH DICTIONARY has several quotes in its definition of the word 'hectograph'. THE TIMES of February 13, 1882: "The manner in which the political hectograph manufactures, reproduces, and multiplies public opinion". THE STANDARD of May 6, 1884: "The police discovered the first number of a new Socialist paper ... printed by hectograph". Come The Revolution, it would seem, the police will identify suspects by their purple-stained fingers. But as an advantage, one can travel innocently with a cookie pan, a few packets of gelatin, and some well-hidden tubes of ink. A letterpress or mimeograph is difficult to explain away to the secret police, but as long as they don't find any ink, it is easy to pass off a few packets of gelatin powder as tomorrow's dessert.

Hectograph kits were still sold as late as the early 1970s, but fandom had mostly gone to mimeograph long before that. It is surprising how long supposedly obsolete technologies can hang on. Hand copying was commercial until the 1880s, and in our own times, the typewriter still sells by the million despite the personal computer.