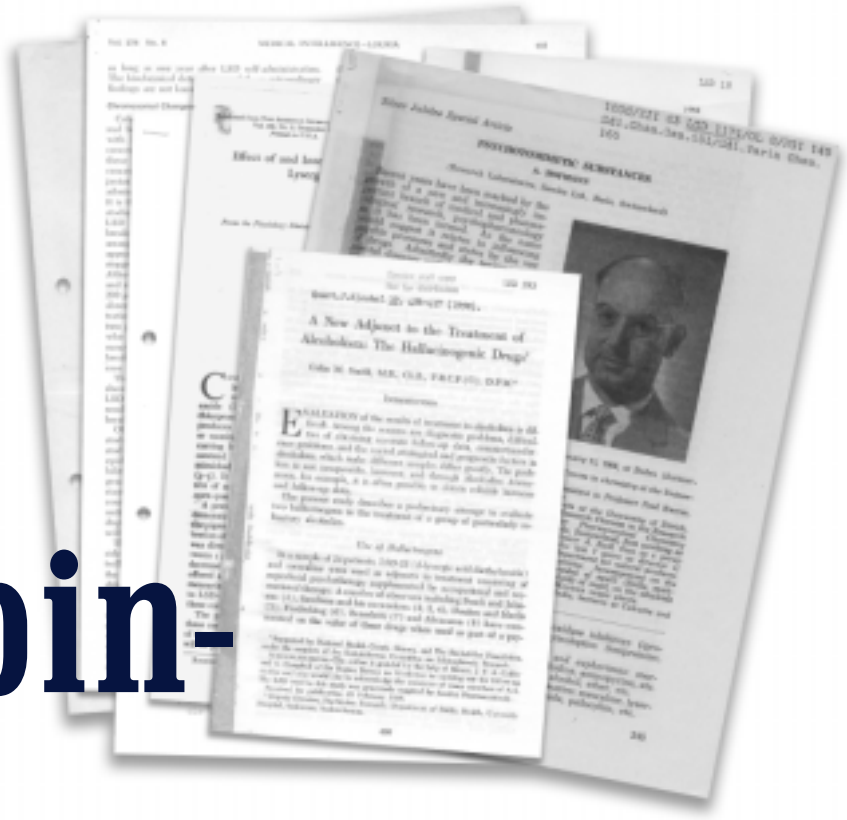
ALBERT HOFMANN'S COLLECTION OF

LSD and Psilocybin-Related Papers

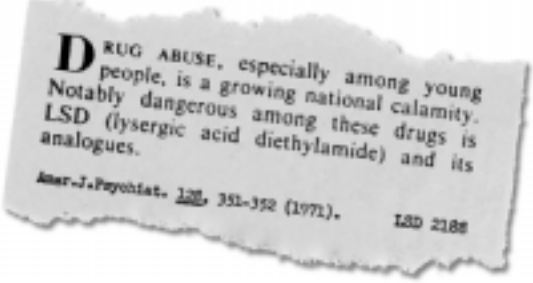
by Earth Erowid



In the early 1950s, Sandoz Pharmaceutical in Switzerland began building a collection of LSD and psilocybin-related articles as part of Albert Hofmann's work with these substances. Sandoz continued adding to this collection for nearly 35 years, gathering more than 4,000 documents on the topic. The collection now consists of a nearly complete archive of historical LSD and psilocybin journal articles from the late 1940s through the early 1980s, as well as a small number of student theses, newspaper clippings, shipping manifests, and similar unique items.

As the library was being built, each newly published article was acquired by Sandoz, given a unique identifying number ("LSD 1" through "LSD 3758"), and then added to the collection in numerical order. Somewhere along the line, the articles were taped into matching binders carefully labelled with the LSD numbers they contained. Two sets of hand-typed index books, in the tradition of card catalogs, were also created. The first index simply listed the basic reference (title, journal, author, publication date) for each sequentially numbered article. The second index listed references and abstracts, again ordered by the master LSD numbers. These binders—79 containing LSD articles, 9 containing psilocybin articles, 13 abstract books and 9 reference books—were then stored in a library at Sandoz Pharmaceuticals where they were available to Albert Hofmann and other researchers working with LSD.

In the mid 1990s, as Sandoz was preparing to merge with pharmaceutical competitor Ciba, the collection was scheduled to be destroyed.[1] With Dr. Hofmann's approval, the Sandoz board granted the collection to the Albert Hofmann Foundation (www.hofmann.org) and in the fall of 1996 the bound books were shipped to Los Angeles. The collection became the cornerstone of the Albert Hofmann Foundation's Museum of Psychedelic History, where it was displayed for eight months during 1998. Unfortunately, lack of funds caused the museum to close and the collection was again put in storage.[2]


DRUG ABUSE, especially among young people, is a growing national calamity. Notably dangerous among these drugs is LSD (lysergic acid diethylamide) and its analogues.

Amer.J.Psychiat. 128, 351-352 (1971). LSD 2188

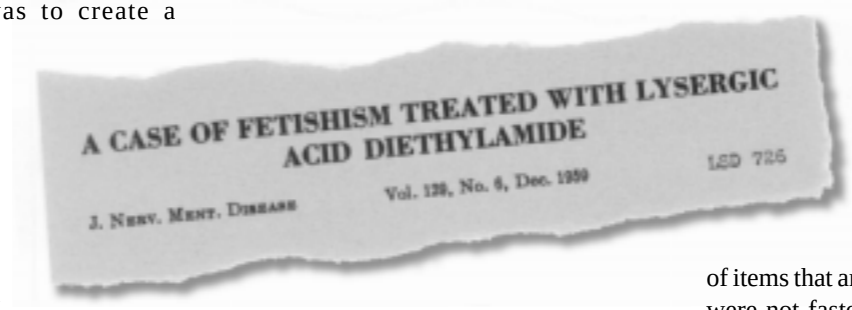
During the late 1990s, the Albert Hofmann Foundation, the Multidisciplinary Association for Psychedelic Studies, and the Heffter Research Institute began the collaborative process of creating a digital index of the papers. The intention of this stage of the project was to create a comprehensive list of all the articles contained in the collection. But due to various circumstances, the group creating the digital index did not have full access to the collection. Instead they worked from a subset of the bound index books, resulting in an incomplete digital index that contained a confusing patchwork of entries.

The Index

In early 2001, Rick Doblin of MAPS asked Fire and me to help assess the status of the collection, and in March we flew to Los Angeles as part of an evaluation team with Eric Katt and Michael Greene from MAPS. Our primary goal was to determine what would be required to complete the goal of making a digital archive of the entire collection. At the time we believed there was already a complete digital index of papers, so we were primarily interested in assessing the physical condition of the collection. We needed to determine how best to digitize the articles without doing damage to them.

Once there we met with Myron Stolaroff (of the Albert Hofmann Foundation) and the individual who housed the collection to discuss the project. We quickly discovered that the digital archive project was in a far more confusing state than we had anticipated. Some articles included both the reference and abstract while more than half had no entry at all. We could discern no pattern as to what had been entered and what had not, making it a somewhat complex puzzle to try to piece together.

Our project scope shifted to encompass the re-verification of the existing digital index. Since that initial visit and assessment a year and a half ago, Erowid has done a complete evaluation of all of the titles contained in the collection, created a new, complete digital index and verified each entry at least three times. Though undoubtedly errors remain—due to pieces missing from the original collection and the tedious nature of entering and checking thousands of scientific


A CASE OF FETISHISM TREATED WITH LYSERGIC ACID DIETHYLAMIDE

J. Nerv. Ment. Disease Vol. 128, No. 6, Dec. 1959 LSD 726

references—we are pleased with the overall level of accuracy we have achieved with the index.

To Scan or Not To Scan

Throughout this process, there has been tension between viewing the collection as a historical artifact—with its primary value as an undisturbed antique from a bygone time—and viewing it as a valuable repository of data. When viewing it as an artifact to be preserved, the digitization project could be seen as an act that reduces or destroys its value. When viewing it as a collection of historically important information, which as a whole would be nearly impossible to re-collect, creating a searchable database of scanned documents incalculably increases the value of both the collection and the research it documents.

Although questions concerning the ethics of archive management are not uncommon in library science, this is the first time we ourselves have encountered the issue. Not surprisingly, we fell squarely on the side of digitization. But many factors were taken into consideration before the decision was made to digitize the collection.

The bound collection was made up of copies of articles which had been previously published elsewhere, and contained no one-of-a-kind or hand-written documents. The value of these articles lies in the information they contain. This value was determined to be greater than the value of the papers remaining untouched in their original bindings. The small handful of items that are unique to the Sandoz library were not fastened into the original binders and did not require removal.

The original books were still mostly intact but were beginning to show damage from age. They would not be able to be displayed and handled in a library setting without incurring further damage. For long term preservation the collection needs to be completely rebound; this can still be done. The digitization process has left the documents better preserved than they were originally.

The most compelling reason for going forward with the project is that it provides dramatically more access to the library for a world-wide audience. While the few people who might have a chance to view the physical collection in the future will no longer be able to see it in its untouched original bindings, many thousands will gain access to the information it contains.

Based on these considerations, it was decided that creating a full digital archive of the documents made it worth dismantling the books.

Digitization

In March 2002, Fire and I moved the physical collection to our home in Skylonda, where we spent several weeks preparing the documents for digitization. With the help of Brandy from MAPS, thousands of articles were carefully removed from their original binding. In many cases this was as simple as wiggling the article, at which point the binding tape, no longer adhesive after 35 years, would simply release. In other cases, the tape was carefully cut to allow the article to be removed.

The documents were then evaluated, one by one, to determine whether they were in good enough condition to withstand the process of mass scanning. Hundreds of the more delicate articles were set aside to be scanned by hand, while the rest were sent to a commercial scanning company. After digitization, each article was slipped into an archival quality plastic sleeve and placed, back in sequential order, into new binders. The original binders, now empty of papers, remain with the collection.

The current collection consists of more than 4,000 individual documents, approximately 80% English and 20% foreign language. Of these, we are missing perhaps a few hundred full texts, although in most of these cases we have an abstract or summary. In addition, about 10% of the physical documents have some sort of defect or problem that reduces their readability, and a few are really quite unreadable.

One of the most common problems is that the tape used to attach the papers to the original binders was, in many cases, placed over some portion of the text. Over the years, the adhesive on the aging tape soaked into the paper and left a residue that makes the covered text nearly unreadable. Other articles were printed on paper that simply couldn't withstand the test of time, yellowing or fading so much that there is little contrast left between text and paper. Many of the papers were just very poor photocopies to begin with and the generational loss in scanning makes them difficult to read and impossible to OCR.

When the digital collection becomes publicly available—through both the Erowid and MAPS websites—our hope is that visitors will help us find copies of both missing and damaged articles, somewhere in the world, to add to this collective digital archive.

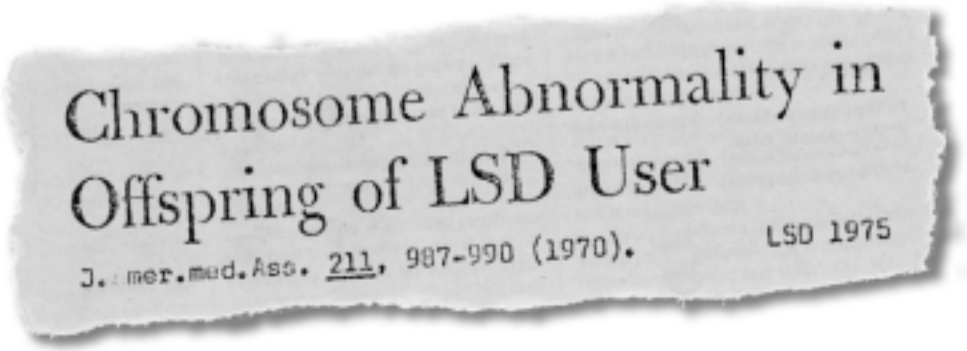
In the last stage of work before the digitization process is complete, crew members Fing, Tonx, Sophie, Scruff, and Brandy are combing through the scanned articles, checking for readability, looking for scanning errors, and making sure that each database entry is connected to the correct document. Once this process is complete, all that remains is some final display design. A preliminary version will be available by the time you have a chance to read this article.

The entire paper collection, now some 30 large boxes of material, is scheduled to be shipped back to Switzerland at the beginning of October 2002 where it will hopefully take its place in a new library.

Working on this project provided the very interesting opportunity to sift through articles about a wide gamut of "scientific research". Topics range from the prosaic, like the use of LSD in psychotherapy and the hubbub over chromosome damage (see below); to the creative, studying the effects of LSD on artistic expression or handwriting[4]; to the bizarre and unexpected, like submerging snails in an LSD solution and recording their reaction.[3]

"Touching history is very exciting for me. Entering thousands of entries into a database is not. Nor are removing tape, sorting papers, or digging through musty filing cabinets. However, this seemingly uninspiring work gave me the chance to touch both the past and future of psychedelic research..."

— Brandy, *MAPS Bulletin*, Summer 2002


Chromosome Abnormality in Offspring of LSD User

J. mer.med.Ass. 211, 987-990 (1970). LSD 1975

The Albert Hofmann collection contains nearly seventy articles on the topic of whether or not LSD-25 causes "chromosome damage". These articles are a good example of the scientific and cultural moral panic that took place in the late 1960s and early 1970s.

In 1967, *Science* published an article, based on the examination of a single patient, which proposed that LSD caused chromosome breakage.[1] As Peter Stafford notes in *Psychedelics Encyclopedia*, "By evening, the charge that LSD could break chromosomes was in all the nation's media."

Between 1967 and 1972, article after article was published, in respected peer-reviewed journals, describing the link between LSD and chromosomal damage, both in vitro and in users and their offspring. As these reports accumulated, popular media amplified the scare, leading to sensational articles decrying the mutations that would be unleashed on future generations.

> "New research finds [LSD] is causing genetic damage that poses a threat of havoc now and appalling abnormalities for generations yet unborn."[2]

Yet, by the mid-1970s, the tide had turned and the scientific literature generally supported the revised opinion that LSD does *not* cause chromosomal breakage or birth defects.

How was it possible for this issue to progress as far as it did? In an atmosphere friendly to reports of negative

This library is particularly valuable as a historical archive because of the rarity of many of the articles. Pubmed, the primary public U.S. database of scientific articles (pubmed.org), does not list any articles published earlier than 1964, is missing many articles up through the late 1960s, and doesn't include abstracts for many papers published earlier than 1990. University libraries are beginning to cull their physical collections, making it increasingly difficult to get public access to older articles from even the major journals. In fact, over the years, many articles about LSD and psilocybin have been cut out of journals or entire issues have been stolen by interested parties. This collection contains many articles which are nearly impossible to find in either physical or digital format—including older articles, and articles from uncommon, out-of-print, and foreign journals. We're pleased to be able to take advantage of the hard work Sandoz put into collecting these papers over the years and hope it will help ensure that future students and researchers have access to the historical record of early psychedelic research.

The direct costs of this project (supplies, scanning costs and outside labor) were funded by MAPS, through a grant from the Promind Foundation. Erowid's work on the project has been conducted as part of our general mission, supported by memberships and individual donations. ●

"In checking PDFs and reading over many titles and abstracts, I was struck by how quaint or dated some of this research seemed. This collection really illustrates how, just as with the creative arts, science is directly affected by the vagaries of fashion and cultural milieu."

— Sophie

1. Stolaroff M. "The Hofmann Report". *MAPS Bulletin*. Spring 1988; 8(1):43-47.
2. Beresford J. Personal Communication. Aug 2002.
3. Abramson HA, Jarvik MEJ. "Lysergic acid diethylamide (LSD-25): IX. Effect on snails." *J Psychol*. 1955; 40:337. LSD #115.
4. Hirsch MW, Jarvik ME, Abramson HA. "Lysergic acid diethylamide (LSD-25): XVIII. Effects of LSD-25 and six related drugs upon handwriting." *J Psychol*. 1956; 41:11. LSD #118.

Science à la mode

One reason that a historical record of past research is valuable is to document the mistakes which have been made. As the LSD and chromosome damage issue (below) highlights, erroneous conclusions may appear valid when they are based on too little evidence or when they result from research that looks for a specific answer.

Another key value of having access to a collection of research spanning several decades is to track how much of what is published in respected journals represents shifting cultural fads, moral views, or contemporary politics. This collection provides rich research possibilities not only for its explicit content, but for its value to anthropologists and historians who are interested in the meta-processes by which science and research are woven into the broader cultural tapestry. It is with the curious eye of an anthropologist that one discovers gems like the following, published in 1968 by the New England Journal of Medicine in a "scientific" review article by DB Louria (LSD #1639):

> "Even more important, the widespread use of LSD, or similar drugs waiting in the psychedelic wings, could lead to a whole generation of psychedelic dropouts, incapable of and uninterested in addressing themselves to the important sociologic problems that challenge our times. If this happened the very structure of this democratic society would be threatened."

consequences of LSD use, a litany of elementary scientific and research errors were ignored by the journals that published the findings. It wasn't until enough research could be conducted to counteract the initial momentum that saner opinions, and better science, prevailed.

In the collection is a copy of one of the key articles that helped end the hysteria that was taking place in peer reviewed journals and the media. The authors conclude that:

> "From our own work and from a review of the literature, we believe that pure LSD ingested in moderate doses does not damage chromosomes in vivo, does not cause detectable genetic damage, and is not a teratogen or a carcinogen in man. Within these bounds, therefore, we suggest that, other than during pregnancy, there is no present contraindication to the continued controlled experimental use of pure LSD."[3]

The progression of this issue and its related articles is a perfect example of how dozens of journal references supporting one position may still be wrong. In many cases, only time and the evolution of knowledge can sort it out.

It would be interesting to read a retrospective on this part of psychedelic research history. ●

1. Cohen MM, Marinello MJ, Back N. "Chromosomal damage in human leukocytes induced by lysergic acid diethylamide." *Science*. 1967; 155:1417-19. LSD #1506.
2. Davidson B. "The Hidden Evils of LSD." *Saturday Evening Post*. Aug 12, 1967; 19.
3. Dishotsky NI, Loughman WD, Mogar RE, Lipscomb WR. "LSD and genetic damage. Is LSD chromosome damaging, carcinogenic, mutagenic, or teratogenic?" *Science* 1971; 172:431-440. LSD #2145.