PAPERMAKING

CRAFT TO ART

The National College of Art and Design

Papermaking: craft to art

A thesis submitted to

The Faculty of History of Art and Complementary Studies

in Candidacy for the Degree

Faculty of Fine Art

Department of Print

by

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May, 1981

CONTENTS

LIST OF ILLUSTRATIONS

ACKNOWLEDGEMENTS

I wish to thank my Head of Faculty, Professor Campbell Bruce, for helping me to go to the Edinburgh Print Conference and Papermaking Symposium, November 1980.

I should like to thank Jean Black, Glasgow, and Leslie MacWeeney, Boston, for bibliographies, Oliver Dowling, John Kelly, Mary Farl Powers and Elizabeth O'Driscoll for lending me books, and to those who gave me their time for interviews.

Introduction

This thesis attempts to look at the emergence of papermaking as an art form within the last fifteen years. This revival of an ancient craft and its development as an art medium is so recent that it still shows strong preoccupations with the history and traditional techniques of papermaking, therefore sections on these subjects have been included.

Paper is such a basic element of everyone's life that it has also been of interest to include a section on the history of papermaking here in Ireland. I have chosen to look at the works in paper of four very different artists who have used it in one form or another in the last few years; these are Robert Rauschenberg, David Hockney, Joel Fisher and, in Ireland, Brian King.

. Robert Rauschenberg, who has worked in all sorts of media, made two exhibitions called 'Pages and Fuses' and 'Bones & Unions', which were very successful

. David Hockney, similarly became involved in pulp and produced 27 large works which I think compare unfavourably with the body of his work

. Joel Fisher is an artist-papermaker, who works only in paper

. Brian King, Irish sculptor and print maker, has very successfully incorporated papermaking into his vocabularly of materials. Since papermaking as art is in its infancy, many of those who use it are relatively young and developing artists.

I shall also look at some of their work as examples of the development of a craft into an art.

Chapter One:

A History of Papermaking

Rags make paper
Paper makes money
Money makes banks
Banks make loans
Loans make beggars
Beggars make ... Rags

anon c 18 Century

The Origins of Writing

The history of papermaking is inextricably linked to the history of writing, since paper was the result of a long search for a cheap and durable material for transmitting information, in fact, a vehicle for thought. In a few limited areas of the world, in the Middle and Far East during the period roughly from 6000 to 3000 BC, cities and centralised administrations came into being. Dependent as they were on agriculture, the ever-expanding number of administrators were responsible initially as store-keepers, but their duties soon grew to include the gathering of taxes and census-taking. They had to keep accounts, and they were responsible for keeping accurate records of the seasons and of the year. They used simple tally systems, symbols devised for use on official seals, symbols or simplified pictures of objects that they used as records. These and the observations made of natural phenomena in calculating the seasons, led to pictograms, and gradually, over many generations, to the systems which led to the beginnings of writing, mathematics and astronomy. By about 3000 BC, writing was being used for records as well as simple tallies and accounts, and this is the point at which archaeology ceased to be the only source of information, and written history began.[1]

In the Middle East, writing was initially chiselled into stone or stamped into clay tablets, neither of which was very satisfactory for everyday business. Several materials were invented to hold writing, although none qualifies as paper in the strict sense, since paper, according to Webster, is "as substance made in the form of

thin sheets or leaves from rags, straw, bark, wood or other fibrous materials, for various purposes." The manufacture of paper thus implies maceration, a pounding of the substance into pulp, and the forming of sheets from the pulp. Papyrus, which mistakenly gave its name to paper, is in fact made from a type of bullrush, split into threadlike strips, laid parallel and covered with another layer at right angles, glued with muddy Nile water or wheatflour paste, hammered, rolled flat and dried in the sun. Interestingly enough, the sheets thus formed were called 'biblos' (hence 'bible') and the city of Byblos in present-day Lebanon yielded the first record of an alphabet. Parchment is made from thin inner layers of sheepskin, by a process improved upon by the King of Pergamum in 200 BC, and the name evolved into the word 'parchment'. Vellum, a form or parchment, is made from whole calfskin by a different technique.[2]

The real home of writing and also of paper is China, starting with the invention of calligraphy in 2700 BC by the possibly legendary Ts'an Chieh. The earliest surviving examples of writing are on divination bones from 1450 BC, incised with prayers to the spirits; the shape of these bones may have dictated the form of Chinese writing from top to bottom. Much later, a further important characteristic was given to Chinese writing by the invention of the camel's hair paintbrush in 250 AD. At about the same time, the earliest use of seals is mentioned, pressed into clay without ink. Ink made from lamp-black came much later, around 400 AD, and within fifty years it was being used with incised seals of stone, metal, wood, bamboo and horn in the manner of rubberstamps as the earliest form of print-making.[3]

From 500 BC silk was commonly used for manuscripts, rolled into scrolls, but by 80 AD writings were described as being written on bamboo cut into cylinders and then split into tablets. By 100 AD a contemporary dictionary describes books as being written on narrow strips of wood held together by cords, rather in the manner of venetian blinds, and later again, the arrangement of the strips of wood resembled the teeth of a comb.[4]

The Invention of Paper

In 105 AD, T'sai Lun, one of the Imperial Guard, announced the invention of papermaking to the Emperor, and is thus generally credited with its invention. The papers were made from mulberry and other barks, from fish nets and rags. The very first recorded use of this invention was in the following year, when we are told that paper was used instead of metal coins which were placed in the tombs of the dead, and that it was called 'spirit paper'. In fact, this custom continues right up to today among the Chinese; as well as fake paper money, all sorts of replicas of consumer goods are made in paper, even such bizarre objects as paper television sets, and these are ritually burned at funerals and on other ceremonial or religious occasions.[5]

The use of paper spread rapidly throughout China, and reached Japan in the early 600s. Although the next major step in the history of papermaking occurred in Japan, it must be considered a Chinese initiative since Japan at that time received all her artistic and cultural development from China. In 770 the Empress Shotoku of Japan commissioned one million 'dharani', which were religious texts printed

on scrolls and kept in small wooden pagodas. These charms were distributed among ten temples, possibly as atonement for a recent rebellion or perhaps against a recurrence of a smallpox epidemic. Nine of these temples were burned down, and only approximately one hundred of these charms still exist. One of the very few complete 'dharani', that is, an original wooden pagoda containing an original and complete scroll, is to be found in the Chester Beatty Library in Dublin.[6]

The Spreading of Papermaking

China's monopoly of papermaking, jealously guarded for over 600 years, was broken by the revelation of its secrets, presumably under duress, by prisoners of war in Samarkand, and from there, papermaking spread rapidly to Baghdad and Egypt by 950. For historical reasons, however, the spread of papermaking was slow, and it was not for a further 200 years that it reached Europe. By this time, paper currency, aptly known as 'flying money', toilet paper and playing cards were common in China, and less than a hundred years later, a Persian traveller was astonished to see that all purchases of food in the Cairo marketplace were wrapped in paper. So packaging, which we would see as a major element of our consumer society, is in fact almost 2000 years old. Shortly afterwards, rags were in such demand in Cairo for making this paper that penalties had to be instituted to combat the robbing of graves in search of the cloths commonly used to swathe the mummified dead. This was echoed much later in the mid-nineteenth century, when the general shortage of raw materials for

papermaking led to the importation of large numbers of mummies into the United States, the wrappings and other fibres to be used to make wrapping paper.[7]

Meanwhile, Oriental papermaking and printing continued to develop. Chinese scrolls gave way to the earliest stitched books, written on one half of the thin, near-translucent sheets of paper, folded to give the image opacity, then 'French-folded' and sewn at the open edges to make a hinged spine.[8] The development of block-printing and the invention of movable type spread from China, although it was in Korea that movable type was first used successfully, since the myriad characters of the Chinese languages did not lend themselves to mass production.[9]

Papermaking in Europe

The first European papermill was established in Spain, under Arab influence, in Xativa (now Jativa) in 1150, and a year later, a stampingmill was being used there. This type of mill, adapted from the East, was in general European use for the next 500 years until the invention of the Hollander machine. Papermaking spread from Spain and Egypt into Germany and Italy, then to France and the Netherlands, followed by blockmaking techniques. In 1450-55, Johan Gutenberg's 42-line Bible was printed. It does not seem excessive to say that this was the beginning of modern history, since this event was the fore-runner of mass production and of democracy, spreading information and education across both geographic and social boundaries.[10]

Footnotes:

1 Liam de Paor, Archaeology, an introduction, (London 1967, Pelican)

2 Dard Hunter, Papermaking, the history and technique of an ancient craft, (New York, Dover, 1978, reprint from 1947 edition, Ch. 1, 2, 3 and 8)

3 ibid

4 ibid

5 ibid

6 ibid

7 ibid

8 Jack Hillier and Laurence Smith, Japanese Prints, 300 Years of Albums and Books, (London, British Museum Publications, 1978)

9 Hunter, Ch. 1, 2, 3 and 8

Chapter Two:

Papermaking in Ireland

Shall quips and sentences
and these paper bullets of
the brain save a man from
the career of his humour?

1599 Shakespeare,
Much ado about nothing

The Company of White Papermakers

The earliest recorded papermill in Ireland was at Straffan, Co. Kildare, in 1590, but papermaking was erratic over the next hundred years, as it was in Britain. In 1690, however, a French Huguenot, Nicolas Dupin, obtained a patent for linen manufacture in Ireland and a second patent to set up a Company of White Papermakers in Ireland, "the same being a new invention there, yet so as not to hinder thereby any of Your Majesty's subjects of that Kingdom from making any sort of paper that hath heretofore been accustomed to be made in Ireland."[1] Simultaneously there are records showing the existence of a papermill at Milltown, Co. Dublin.

According to the registers of births, marriages and deaths of the French Conformed Churches of St Patrick and St Mary in Dublin, Dupin's workforce seems to have been mainly Dutch. Dupin was a person of obvious great resource, with businesses in Holland, where he had fled from France. In England he had set up a similar Company some ten years earlier, manufacturing linen both there and in Scotland. These patents gave him, as Governor, monopolies of white writing and printing papers for fourteen years.

The two earliest surviving examples of Irish paper are both made by Dupin - one is an advertisement in an April 1692 edition of the 'Dublin Intelligence', which extols the quality of Dupin's paper 'such as this'. The other is a treatise by the Reverend Samuel Johnson, "An Argument Proving that the Abrogation of King James ... from the Regal Throne and the Promotion of the Prince of Orange ...

was according to the Constitution" with a London imprint, also 1692. However, one of the two surviving copies bears Dupin's Dublin watermark, and must therefore be a fake.[2]

Due to the Williamite wars, embargos on trade with France were in operation from 1678 until 1685, and from 1690 until 1697, but since these did not apply in Ireland, Dupin's business flourished as paper became scarce and prices rose steeply. In England, the effect was dramatic; paper became so dear that all printing stopped. In Ireland, the price of paper doubled from 1680 to 1695, but papermakers failed to meet the home demand. Since European papermakers had more experience and paid their workforce less than in Ireland, their paper was better and cheaper, and imports of paper doubled within a year of the declaration of peace in 1697. The excise and customs duties on imported papers had stood at 5% each from 1662, and the increases in 1697 boosted domestic production, although Ireland was dependent on imports for a further sixty years before domestic business flourished sufficiently to warrant further increases in import duty.[3]

Paper in the early Eighteenth Century

Dublin in the early eighteenth century was a seat of government, and as such it had a high proportion of nonproductive citizens; those who worked in the administration of the government, as well as landowners from all over the country who were busy spending their money in stylish fashion in the capital. It also had little or no local industries other than those which served the Irish parliament and the whirl in which it was surrounded. Much new building was going up in

Dublin, and the versatility of paperstainers had led to a great craze which swept western Europe for the newest decorative materials made from paper. These were imitation chintz, fake stucco, and 'superfine impost (embossed) tapestry', which soon evolved into wallpaper. The fake stucco was so successful that it is startling to find how much elaborate plasterwork, still in perfect condition, is found on meticulous inspection or on demolition to be the original cast paper. As this craze passed, Irish papermakers turned to 'execrable editions' of classic works for the American market. This was only possible because the English copyright laws had never been extended to Ireland.[4]

In Cork, there are records of a papermill in 1762 owned by Phineas and George Bagnall, and of another in Douglas in 1799 owned by Messrs Perrier (presumably of planter and Huguenot stock respectively).[5] However, Cork is remarkable in that in the last years of the century, it produced a paper currency of its own, in the form of promissory notes called 'silver money' or 'silver paper'. The enterprising Mr Sadlier, well-known in the cotton industry, was the first to issue these notes, in an effort to combat the lack of His Majesty's currency, and the refusal by many of the populace to recognise dollars and french crowns, which were commonly available through the widespread occupation of smuggling, in view of their prohibition in 1775.

The Journals of the Irish House of Commons

The high point of Irish papermaking started in the period between 1730 and 1750, when the Parliament in Dublin allocated over £2000 in direct aid to papermills. In view of the fact that paper-making was a handcraft needing no very large capital investment, this

was a huge sum. Tarrifs imposed on imports, except from Britain, further protected the Irish industry. Later, at the very end of the century, the Irish Commons was no longer handing out direct aid, but was guaranteeing a market by accepting as policy the use of Irish paper in official publications. This was in spite of the repeated mention of the deficiencies in the paper and the fact that imported papers were still cheaper. Thus the Journals of the House of Commons of the Kingdom of Ireland were published on Irish paper from 1753 until 1794, and an Index in two further volumes appeared in 1802.[6] These Journals make bittersweet reading since they record, among other business, the debates and events that led up to 1799 when the Irish Commons voted itself out of existence, and was dissolved by an Act of Union in the following year.[7]

These Parliamentary Papers can be identified by their watermarks, and show their provenance from the many mills that flourished in the region of Dublin. These were based on the Liffey and the rivers to the south of the city, the Dodder and the Owendoher, and included mills at Newbridge, Tallaght, Templeogue, Rathfarnham, Rockbrook, Whitechurch, Donnybrook and Kilternan. The names of the mill owners show a strong planter tradition, such as Archbold, Beauchamp, Burrows, Chandler, Keeling, Eaton, Nixon, Kinnear, Mansergh, Randall, Slator and Verney. Interestingly enough, the native Irish family MacDaniel (later MacDonnell or MacDonald) owned two small lakes from which they had established an artificial river, the Camac; they owned papermills situated at Saggart and Clondalkin, but received no parliamentary support. Two of the four remaining papermills in the Dublin region today are found at Saggart and Clondalkin.[8]

The Period of Free Trade

The Act of Union led to the withdrawal of the absentee landlords to London, their new seat of government, and to the establishment of free trade, which severely undercut domestic prices. Furthermore, a paper tax came into effect in 1804 relating to Ireland only, which imposed levies on Hollander machines, crippling licenses and heavy excise dues. No paper could be removed from a mill without a signed permit from the area excise officer, and in officially stamped wrappers, which made great difficulties for those who ran Fourdrinier machines. Duty on paper increased ad valorem with free trade, so prices dropped. Unpaid excise dues could be recovered by distraint on papermakers' raw materials, plant or produce after 24 hours notice had been given. No mill could start production without permission from the excise authority, and once started, was assumed to continue in full production and was taxed accordingly. No mill could be shut down except on the morning of the firth day in the months May to October.[9]

Against such odds, many honest small firms went out of business, and contraband flourished. The forging of excise wrappers, almost as serious an offence as the forging of currency, flourished, and many papermills shut down to reopen as cornmills, but producing sackfulls of paper. The fines were huge; in one case a fine of one hundred pounds was imposed on a papermaker whose total assets amounted to seven pounds ten shillings. The revenue from Irish papermakers jumped from under £5000 in 1799 to almost £18,000 in 1809, and to £23,000 in 1829. By 1835, it was £30,000. All honest firms were in despair, and the discovery of esparto grass paper in 1840 delivered the final blow.

As late as 1838 there were 60 registered papermills in Ireland, and by 1860 they were reduced to 26. In 1861 it was judged that a tax on paper was a tax on knowledge, and the Paper Tax of 1804 was repealed.

* * * *

Irish paper seems never to have been of a quality that encouraged its use in painting or drawing. However, an elusive Mr Ian O'Casey is said to have made paper of high quality sporadically in Shannon and/or Galway.

Footnotes:

1 M. Pollard, White Papermaking in Ireland in the 1690s, (Annals of the Royal Irish Academy 1965, Trinity College, Dublin)

2 ibid

3 ibid

4 Ada Leask, Paper Stucco in Ireland, (The Papermaker magazine, Hercules Powder Co., Wilmington, Delaware, USA, Vol. 32, no. 2, 1963, pp 37-45)

5 O Sullivan, Economic History of Cork City,

6 Irish Commons Journals, (1763, Vol VII, pp 209 and 257)

7 Desmond Kennedy and Alf MacLochlann, (The Journals of the House of Commons, an Important Source of Irish Papermaking History, The Papermaker magazine, Vol. 29, no. 1, 1960, pp 27-36)

8 ibid

9 Denis Kelleher, Papermaking in Ireland, (The Papermaker magazine, Vol. 19, no. 2, 1950, pp 21-29)

Chapter Three:

Techniques of Papermaking

Heaven does not permit such a divine art to be made easy for mortals here below

J. Imberdis, SJ, 1693
from Papyrus sive ars conficiendae Papyri

Preparing the raw material

For many hundreds of years, the methods used to make paper were based on the original Chinese techniques. The Chinese method, as indeed described in a Japanese book on crafts dated 1736,[1] remained virtually the same, and is still the basic way that Japanese handmade paper is made today. Like other crafts, technological knowledge was slow to spread, even when mechanisation of the processes started, so that it has been possible, even in this century, to find the oldest forms of the craft still being used at the same time as the most automated forms of modern technology.

The raw material, initially bamboo, hemp, cotton rags or mulberry, was cut into small pieces, steeped and boiled in lime to break down the fibre content and detach any impurities. In the case of rags, they were dampened and left to rot and even to ferment. The material was then rinsed, often in cloth bags in running water, to remove much of the dirt and also the alkaline residue. The usual traditional Japanese raw material is mulberry, where the sticks were soaked for a long time, often in a stream or river, to soften the bark, which was then picked off by hand, and the twigs soaked again until they became waterlogged.

Making the Pulp

The next step was to macerate the raw material into a pulp; originally this was done by a mallet or mortar and pestle, but later in the development of papermaking by both the Chinese and the Arabs, a trip-hammer was used. This was a very weighty hammer balanced on a pivot with a sufficiently long horizontal beam to allow several

men to stand on it. They let the hammer fall on the pulp again and again until the fibres had been pounded and broken enough to reach a point where they were floating in a solution of water and cellulose. Stone rollers and circular troughs were a development of the trip-hammer, powered by oxen or donkeys, and later, stamping mills operated by running water, such as the one used in the first papermill in Europe in Xativa.

Paper pulp is ready when it reaches the proper point of freeness (when no fibres or threads can clearly be seen in the pulp) and of hydration (when the fibres are so saturated in water that they give off their own mucilage, or bonding agent, resulting in the pulp feeling slippery). It is then diluted with water in shallow tanks to make slurry, according to the number and thickness of the sheets of paper required. The problem of how to make thin, even layers of the microscopic intertwining fibres in the slurry and simultaneously allow the water to escape freely led to the invention of the mould, which is the papermaker's most essential tool.[2]

Moulds, Watermarks and Deckles

The earliest moulds were made of closely woven cloth and the slurry was probably simply poured onto the mould and allowed to dry. The texture of the cloth was imprinted on the paper, making what is known as 'wove' paper, a process which was re-invented in the 1750s in England.

Rattan moulds, and later bamboo, followed, and with them the idea of a screen from which the paper could be removed while still wet,

allowing the screen to be re-used. Thin strips of rounded bamboo were laid side by side and laced together with fine silk thread or even hair, in the manner of rolled Chinese grass mats one can still buy today. To support this screen, the mould was fitted with wooden ribs. The entire mould, both frame and screen, were dipped vertically into the tank or vat, and withdrawn horizontally. The flexibility of the screen allowed the paper to be transferred upside down onto the growing pile of sheets of paper, and the screen rolled up and lifted away without marking or wrinkling the wet sheet.

A mould made in this way makes quite different marks on the paper, those made by the bamboo strips now being known as 'laid-lines', and those made by the stitching, 'chain-lines'. Some time after the introduction of papermaking into Europe by the Moors, natural fibre moulds gave way to those made with thin brass wire, whose resilience allowed the frame and screen to be made as one piece. Nevertheless, the forming of the screen in thin brass wire and thinner brass threads, was still according to the traditional patterns, so that laid-lines and chain-lines appear in many modern 'quality' papers. Watermarks are made by sewing a monogram or design in even finer brass thread to the mesh of the mould, so that the pulp is slightly thinner there than elsewhere on the page, and the watermark, being translucent, is clearly visible when held up to light.

The vatman's job was a highly skilled one, knowing how dense the slurry should be, how deeply to dip the mould, and in particular, shaking it gently as it was being drawn out of the liquid, first front to back and then side to side, so that the fibres in the pulp inter-

locked with very nearly the same tensile strength in both directions. In the Japanese tradition, this has almost always been a woman's job.

From the earliest times, additives have been used in papermaking, either as bonding agents applied as a coating such as Tororo-aoi, or as a sizing agent in the vat, to make the paper more receptive to writing ink, such as gelatine, gypsum, glues, starch-flour or other sizes made from grains. Bleach has also been used extensively since its invention in 1774, although it requires interminable rinsing to prevent it 'burning' the paper, that is, becoming brittle and turning brown from the edges inwards, as old newspapers do.

A further development of laid moulds was the introduction of a deckle. Originally two bamboo sticks held top and bottom of the screen, this became a thin frame of wood fencing in the flow of the pulp, so that the overall thickness of the sheet was constant and did not thin out as it washed away over the edge of the deckle. This deckle, in time, became completely removable from the mould, so that one man could use the deckle again on a second mould while the first mould drained at the edge of the vat, resting against a sometimes very ornate prop known as an 'ass' or 'asp'. His or her assistant, the 'coucher', judging when the mould had drained sufficiently, would lift it and transfer the sheet of paper with great expertise onto a stack of previously made sheets.[3]

Drying the Paper

A feature of Eastern papermaking is still the ability to place very waterlogged sheets of paper one on top of the other without any adhesion taking place. This may be due to the purity of materials or

to the qualities of a particular vegetable additive called 'tororo-aoi' from the Hibiscus Manikot or paste tree, which is used as a bonding agent. In the rest of the world, the paper is sandwiched between 'felts', still called thus although they were replaced very early on by a woven woollen cloth. In traditional Oriental papermaking, the sheets of paper are peeled from the pile and pasted to large wooden panels, or in India, smooth metal plates, or even onto plaster walls, with no adherent other than their own water, and left to dry in the sun. A feature of papermaking villages in Japan is the large area of pollarded trees against which are parked very large wooden panels holding 'shoji'. These are the large thin translucent sheets of paper, fastened to wooden frames which are still used as sliding partitions in Japanese houses. Every year they must be ceremonially replaced, although most contemporary Japanese can no longer afford handmade paper for this purpose.

In Europe, with less clement weather and an increasing value being put on time, the stand of paper, that is 144 sheets of paper and the interleaved felts, was put in a 'wet' screw press, sometimes repeatedly and with replacement dry felts, and compressed to extract the water. The papers were then peeled from the felts by the 'layman' and hung in bunches known as 'spurs', traditionally on horsehair ropes, in a drying loft. Then the paper was re-flattened in a 'dry' press. The layman's job also became very elaborate, with different pressing procedures giving different finishes to the final product. The paper was often treated further by hammering or burnishing to produce different surfaces. [4]

The mechanisation of papermaking

Papermaking remained very much based on this craft method until the invention of the Hollander beater in the latter part of the seventeenth century. The Dutch mills were operated by wind-power and they envied the high production of their neighbours, the Germans, whose mills ran on water-power. So a Dutchman, whose name has been lost, invented this beater, which consisted of an oblong wooden tank with rounded ends, in which revolved a section of tree-trunk fitted with about thirty iron knives, set over a metal or stone bedplate. This beater eliminated the need for rotting the rags, which reduced waste very considerably, since only a small proportion of the rotted rags were suitable. However, its cutting action made paper that was less strong than that produced by pounding, since the chopped fibres retained smooth surfaces rather than the mashed ragged 'fibrillations' which make for better bonding. Nevertheless, the basic idea of the Hollander is still used in pulp-making, and small-scale beaters of this type (although in more technological materials, like fibreglass) are being made today for the handmade papermaker.

The second invention which revolutionised papermaking was the Fourdrinier machine, which brought automation to the ancient skills of the vatman and the layman. The history of the invention is a garbled one, starting with the invention of the machine in 1798 by a Frenchman called Nicolas Louis Robert. Due to quarrels, a flaw in the second patent and Robert's untimely death, neither he nor the Fourdrinier brothers (who in any case were merely financiers) gained from the

invention. Notwithstanding the machine was Robert's invention, it still carries the Fourdrinier name. The process involves the travel of the wet pulp along a continuous vibrating band of wire mesh, rapidly losing water and delivering a film of wet fibres onto a thick soft blanket. It passes first between pressing rolls, which eliminate more water, and then heated drying cylinders and calendering rolls that give it a smooth surface. Finally, the continuous roll of paper is wound onto a reel, ready for cutting and stacking.[5]

The search for raw materials

With these two inventions the mechanisation of papermaking was under waa, but it soon ran into difficulties. An unresolved problem became the expensive, wasteful and restricted supply of linen and cotton rags and the lack of alternative raw materials. From the mid-seventeenth century it became a felony in Britain to bury the dead in either linen or cotton (only wool could be used), and well into the nineteenth century it was made a punishable offence in Britain to publish a newspaper larger than 22 by 32 inches, to save paper. In fact, the spread of papermills across the United States can be plotted by advertisements in the local newspapers, which not only announced the setting up of a papermill in the area, but almost invariably that good prices would be paid by the mill for good rags in quantity.

From the late seventeenth century, paper was made from every possible substance; from asbestos, seaweed, moss, broom, the cods of the common catepillar, pine-cones, potatoes, grasses, barks, turf and every sort of foliage. A French naturalist, René Ferchault de Réaumur

first suggested the use of wood in 1719 after he had observed that wasps' nests are constructed from very fine paper made from wood, and a Bavarian amateur botanist, Jacob Schäffer, published six volumes reporting his experiments in papermaking with a huge number of vegetable fibres. However, it was not until the turn of the century that Matthias Koops of Westminster Bridge, London, applied for patents, firstly to recycle paper (although paper recycling is first mentioned in Japan in the eleventh century) and secondly, for "a method of manufacturing paper from straw, hay, thistles, waste, and refuse of hemp and flax, and different kinds of wood and bark".[6] He went bankrupt, but in 1840 his methods were developed in Germany to produce the first paper made from wood pulp, which is still the staple ingredient of most papers today.[7]

Paper pulps today

There are four kinds of woodpulp used in the commercial manufacture of paper today; groundwood pulp, which is used for newsprint and, being very acid, discolours and burns out quickly; sulphite pulp, in which the impurities are removed from woodchips of pine, spruce and fir by fuming them in bisulphite of lime under pressure, used for books; soda pulp or humus, from poplar or cottonwood chips boiled with caustic soda for a better quality bookpaper; and sulphate pulp, in which sodium sulphate and other chemicals produce a strong dark paper for wrapping. The best quality artpaper is still made from rags of cotton or linen.[8]

Footnotes:

1 Untitled Japanese book on crafts, (1763, Chester Beatty Library, Dublin)

2 Hunter, Chapter 5

3 ibid, Chapter 4

4 ibid, Chapters 6 and 8

5 ibid, Chapter 12

6 ibid, Chapters 11 and 13

7 ibid, p 333

8 Garo Antreasian and Clinton Adams, Tamarind Book of Lithography, (Harry Abrams, New York 1970)

Chapter Four:

Papermaking, art from craft

Those pieces of rag, be quick and bring!
The dusty old shreds are just the thing -
For pulp, for pulp, to record life's wrong,
For pulp, forpulp, for a poet's song.
It comes out smooth and glossy and thin
From rollers and wheels and cylinder's din
Dor lords and ladies their notes to indite;
For pretty poets who scrawl by night.
And newspaper scribblers who bluster and blow;
for little love-letters where compliments grow;
and stories in which the afflictions of men
Are wretchedly told by an unskillful pen.
On just such rags as once wiped away
the tears whereat thou weepest today.

Carmen Sylva, 1889
(penname of Elizabeth of Rumania)

Papermaking, art from craft - an historical introduction

The use of papermaking, whether as a total language or as one of several media used by an artist, has come about through printmaking. In order to understand the development of papermaking as an art form, it is necessary to look at the recent history of print.

The decline of printmaking in the early part of this century was due to the rise in industrial illustration and photography, which brought about a change in function in printmaking, as it had in painting somewhat earlier. From the Twenties, in a brief-lived revival, the signs of confusion about the function and place of printmaking were very evident. In a search for validity, artists looked backwards at the history of print, and many works used the simplest most primitive forms of printing to differentiate their work from reproduction in all its forms. This reproduction was already beginning to swamp everyday life, with the boom in illustrated newspapers and magazines, the greater use of photography and the greater emphasis on illustration in advertising, as well as the exploding popularity of the cinema.

The most obvious examples of this art-as-craft reaction are the wood engravings of Eric Gill, who drew on European and Japanese tradition, simplifying the ornateness of Art Deco to produce a fine but strong and very sensuous line which was, working in the endgrain of the wood as he did, a mastery of technique.

The Depression, quickly followed by World War II, however, led to a virtual loss of interest by the public in printmaking, despite such schemes as the National Endowment for the Arts in the United

States and the Schools Project in Britain, which employed eminent artists to make prints.

By the late Forties, S.W. Hayter was keeping etching alive in his Paris studio, and when June Wayne visited Europe in the early Fifties, she studied under Europe's last lithographers. She went home to California, however, to establish Tamarind, a lithography workshop which sowed the seed for the revival of printmaking and led to the exploration of print techniques of all kinds. This became part of the print boom of the Sixties, in which all the traditional criteria of printmaking were overturned.

The advent of Pop Art and its devotion to mass-media imagery led to the acceptance of industrial techniques in print. Silk-screen printing had been invented in the Twenties, but did not really gain acceptance until the early days of Pop Art, which went even further in hailing photoscreen and photolithography as valid art media. Print boomed, although etching, as a hand process, almost became eclipsed. The culmination of this anti-fine art and pro-industrial sensibility could be said to be the brief popularity of multiples, a somewhat utopian production of art objects by industrial means.

The early Seventies brought several changes. Pop Art had become so successful that its artists were moving towards multi-media works as a reaction to the fierce competitiveness of the continuingly avid market. Photography itself had gained more acceptance as an art form, and the Photo Realist painters seemed for the most part, particularly in their prints, to demonstrate the inherent poverty of photoreproductive

techniques, despite excellence in craftsmanship. It seemed that a print market based largely on an industrial outlook could not continue its success, and early inflation began to bite. The theory that art should be mass-produced in our industrial society was wearing thin, and the importance of the manual gesture was re-emerging.

In printmaking, the manual gesture was pioneered by Whistler in the late 19th Century, who almost ironically also pioneered the editioning of prints, one a reaction against the industrial process, the other aping it. In painting, the idea of the manual gesture had reached its highest expression in the work of the Abstract Expressionists, so their work became a reference point for justifying unique prints, collage-prints and the handcolouring of prints. June Wayne at Tamarind and Tatyana Grosman in Universal Limited Art Editions found themselves in increasing demand to teach their fine-art print techniques. The emphasis had shifted to hand printing on hand-made plates, and the step to hand-made paper was inevitable.[1]

The revival of interest in handmade paper, initially as a support for handmade prints and then as an art material in its own right, happened under the influence of three men. The first was Dard Hunter, papermaker and author, whose book, 'Papermaking, the history and technique of an ancient craft' originally published in 1943, is still the papermaker's bible, which it nearly resembles in length and detail. This loving and meticulous study languished in relative obscurity until the Sixties, when the general swing against standardisation led to the revival of interest in matters relating to the 'simpler' life.

Douglass Morse Howell, working in similar isolation for most of his life, has been making paper by hand for fifty years. As well as bookbindings and beautiful papers for artists, he has made prints and sculptures and works partway between the two with handmade paper, exhibiting them in New York as early as 1953. He collaborated with Jackson Pollock on some works in the early Fifties and his experimental approach provoked curiosity about paper as a medium.[2] From the early Sixties, William Weege of the Jones Road Print Shop and Stable, and Joe Wilfer's Upper US Paper Mill, both in Wisconsin, printed, cut, glued, flocked, painted, layered, tore and stitched handmade paper, and Garner Tullis of the Institute of Experimental Printmaking worked in paper casting.[3] While these works came partly out of American ingenuity and whimsy, and partly from the growing late-Sixties and Seventies process trends, they had their influence in the acceptance of paper as an art medium.

It remained for one of Howell's students, Laurence Barker, to establish papermaking, initially as part of printmaking, at the Cranbrook Academy of Art from the early Sixties. Those whom Barker taught, taught others, and when Robert Rauschenberg made his first works in paper in 1973, he was giving a stamp of approval to an existing, although largely unrecognised, avenue of exploration. Interest grew so quickly in this 'new' medium and the changes of perception it caused that it is now a recognised part of an American art education.

Robert Rauschenberg

David Hockney

Joel Fisher

Brian King

Robert Rauschenberg

In a way it was inevitable that Robert Rauschenberg should work in paper, although it must be said that in so doing, he also rendered a large service to papermaking. Until his experiments with paper as a material, it had been the province of lesser lights, and his involvement, as one of the foremost artists of his time, has certainly led to a widespread interest in papermaking.[4]

Rauschenberg on his Art

His approach is one of rejecting 'the whole idea of getting an idea for a picture and then carrying it out'[5], and he also rejects the self-enquiring, self-expressing struggles of much of this century's art. These rejections place him in a role of acceptance and open-minded curiosity about the materials he uses and his subject matter. Always an explorer of the unfamiliar, 'my process is a matter of just accepting whatever happens, accepting all those demands from outside and then trying to work them in a sort of free collaboration'[6]. He also talks of 'a friendly relationship with materials. You want them for what they are rather than for what you can make out of them'.[7] Thus he has worked in a wide variety of materials, establishing an expressive idiom whose apparent randomness belies an inherent aesthetic formality, and showing that even the banal and commonplace have an aesthetic potential.

Having established a major part in American art as the bridge-figure between Abstract Expressionism and Pop Art, particularly with his part-painting, part-sculpture 'Combines' in the Sixties,

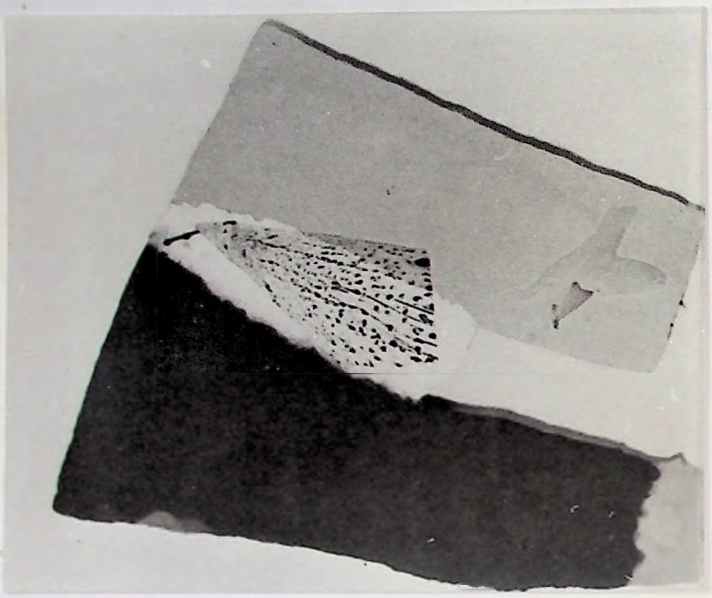
Rauschenberg became involved in ephemeral works in junk materials from the recession of the early Seventies as a reaction to the expense, weight and permanence of sculpture.[8] The 'Cardbird' series that he made at this period foreshadows his later interest in pulp, and he was also making many prints at this time. The series of prints immediately before making of 'Pages and Fuses', the exhibition that showed his first ventures into working with pulp, was a series called 'Horsefeathers Thirteen', combining five different processes and applied in as many as eleven separate stages. They each contain standard and variable elements, in apparently arbitrary choice, and they are based strongly on shapes within the paper. The step to shaped paper seems inevitable in retrospect.[9]

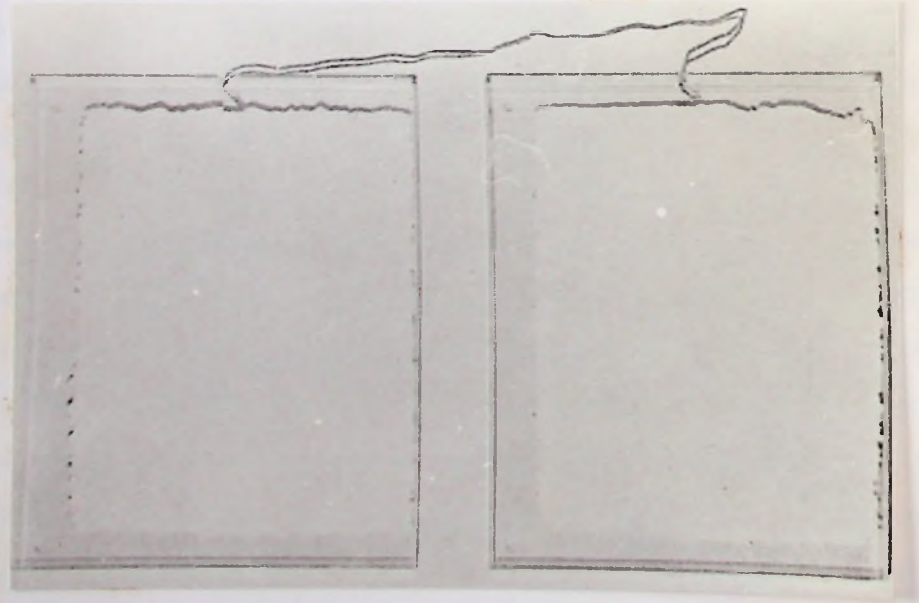
'Pages'

In 1973 Kenneth Tyler, who had established Gemini print studio in Los Angeles and then set up Tyler Graphics in New York for more experimental work, arranged that Rauschenberg work for a short period at the Richard de Bas papermill in the Auvergne, France.[9a]

His first work was the five prints called 'Pages', in which he wanted 'form to be the print'[10]: one was made of four shades of pulp from white to grey, and one of them incorporated a rag from which the pulp was made, laminated between two 'swirls' of pulp. Since this and the following print, a circle with a central hole, were made by pouring pulp onto a wire mesh, the editions vary considerably. He also made two works (Page Four and Page Five) (see over), each consisting of two simple sheets of paper connected by a laminated string.

page five
& link





The first two were in separate perspex box-frames and hung vertically with the string continuing through the lower sheet and hanging to the floor. The upper sheet of paper rests on the bottom of its box, the lower sheet is suspended very near the top of its box, a suspension of belief in gravity and logic, since the connecting string also 'disappears' into the paper. The second pair, 'Page Five', repeats this surreal idea 'lying down' in their boxes with the string falling loosely out of the right hand side of one box and back into the same side of the other. The texture of the perspex is a high contrast to the unevenly-edged paper and the soft string.

'Fuses'

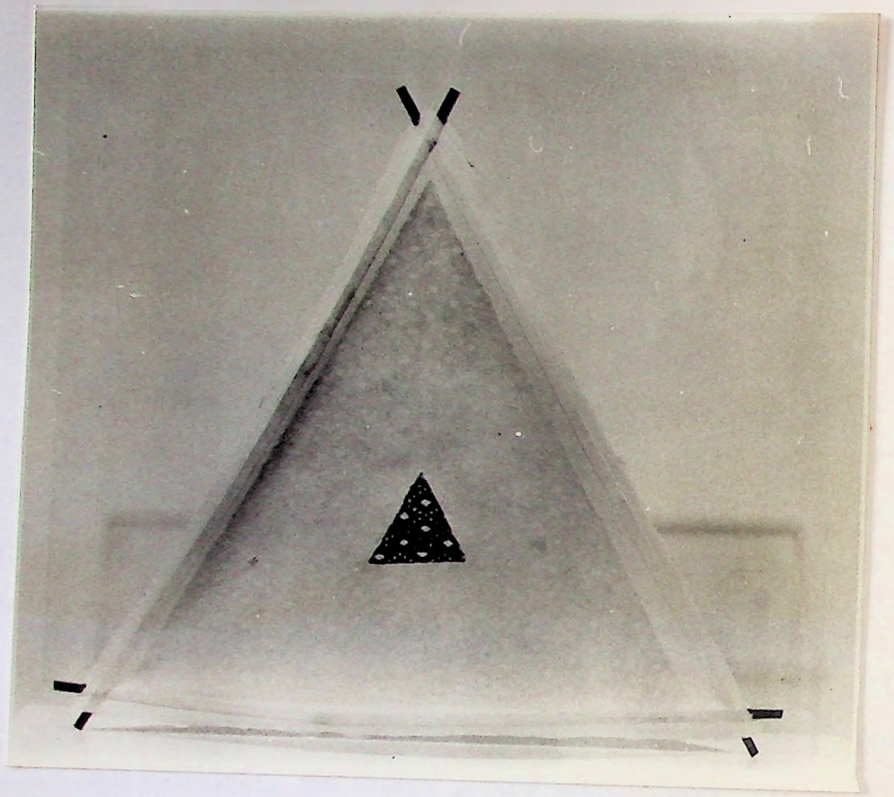
The second series which he made at this time was 'Fuses', wanting to try 'painting with paper'[11]. He had tin moulds made to separate pulps of different colours and the pulp was used to make differently sized and shaped blocks of colour/paper bonded into one irregularly shaped sheet. He laminated photographic magazine images printed on tissue to these pieces, again variably. The photographic images deal beautifully with the major problem of using coloured pulps, the blurred edges of colour that pulp ordains, and their specific sharpness allowing the colour strips to fuse softly into each other. One mould served for two of these pieces, incorporating a circle in one area. Rauschenberg left the circle empty in 'Vale', making a hole which reveals a differently coloured paper underneath. The 'Roan', showing his continuous inventiveness, turns the mould upside down and 'Overfills' the circular area, thus making a crusty blob that overspills the circle edge.

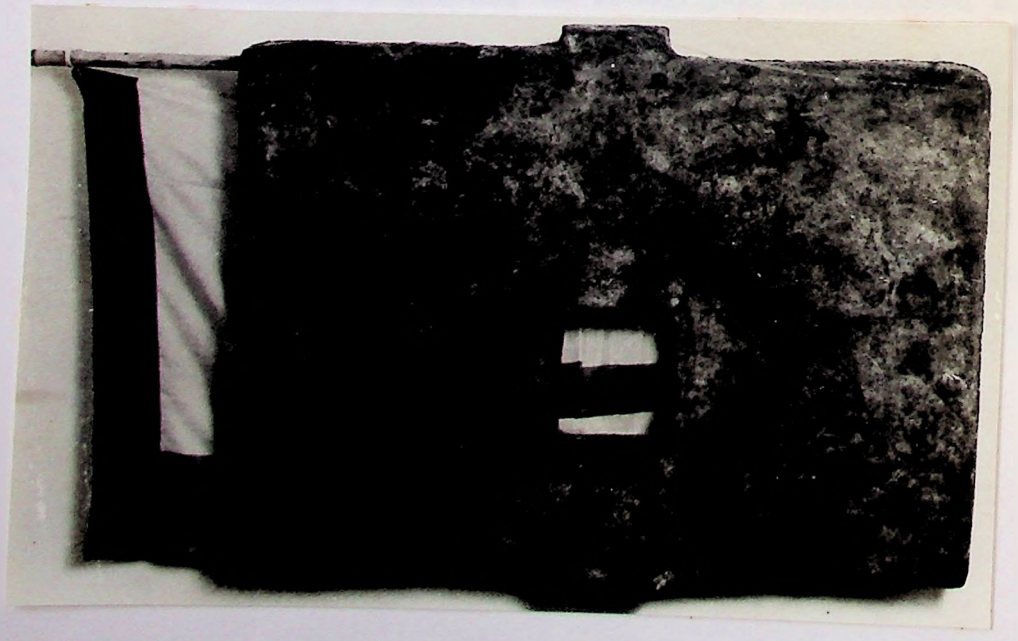
The best known of this series is 'Link' (see over), using a startlingly asymmetric shape sometimes even 'straightened' in reproductions. It incorporates two photographic images; a telegraph pole in sharp perspective from below, and a bird flying in the lower corner of the blue ('sky') section which echo the tree inhabited by the bird, made into wood, made into paper. The symmetry of the two largest sections, red and blue, are offset by the yellow piece bottom left, whose colour enriches the others and whose weight 'tilts' the whole piece, giving an even stranger perspective to the extenuated diamond of the pole.

'Bones and Unions'

Two years after his first papermaking venture in France, Rauschenberg visited India with a printer from Gemini. They stayed one month in Ahmedabad, textile capital of India, where Mahatma Ghandi was born, and had established 'ashrams' to teach skills, including papermaking, to the untouchables.[12] The works in the first series 'Bones' incorporate tied bamboo strips laid on wet pulp, fabric pieces put in place and laminated with more pulp. 'Little Joe' (see over) is a 3D multiple rather than a print. The strong pattern of the fabric can be seen through the thin pulp. Apart from the obvious 'Indian' and 'wigwam' pun, it foreshadows his later series 'Jammers' which uses the shapes and materials of sailing.

Rauschenberg found that the poorest Indian houses are often made of an adobe-like mix of strawboard, coaltar and chalk. With a craftsman, he concocted a blend of this 'Indian mud' and paper pulp to make what he called 'rag-mud', the material of the 'Unions' series. The traditional





insect-repellents were included, so the final list of ingredients includes pulp, fenugreek, tamarind,chalk, gum powder and copper sulphate.[13] Having brought the act of making paper into printmaking, he now stepped totally into the field of sculpture, fashioning the ragmud into shapes by hand. He made six editions, incorporating rope, twine, bamboo and brilliant silks. 'Capitol' is the best known of these works, an articulated hanging relief made of ragmud compound, silk, bamboo and wood. The contrast between the textures of ragmud and silk, as well as the contrast in solidity and shape between them, nearly compensate for the lack of articulation in illustration. It is a beautiful object, illustrated here.

From 1974 for two years, Rauschenberg had also been involved in the co-production of a livre-de-luxe 'Traces Suspectes en Surface' with Alain Robbe-Grillet, the French philosopher. Robbe-Grillet supplied the text and Rauschenberg the lithographic illustrations, and it was made on paper from Twinrocker, a very early hand-papermaking company of the American revival. The book was produced as a dialogue, each instalment of the text being answered by a print, but dissent arose and Robbe-Grillet sought to win the argument by sending all his remaining text to be printed without further illustration. Rauschenberg countered by insisting on his right to be responsible for the colophon and for the colour of the text.[14]

David Hockney

In the summer of 1978 for various reasons, David Hockney found himself at a loose end in New York and paid a promised visit to Tyler Graphics. As a result, he spent the next two months making 29 works in paper pulp on the theme of paper pools.[15]

Hockney has long been particularly appreciated for his fine draughtsmanship. He says that in terms of output, he makes a hundred drawings for every one painting,[16] and he is equally known for his beautifully drawn etchings.

Stephen Spender said of him in 1974, 'like all artists who have literary passion, Hockney is above all a linear artist. His line is like storytelling, like a poem ... a minute observer, a meticulous draughtsman.' He even likens Hockney to a barograph, in which a needle draws a fine ink line in response to atmospheric pressures. Spender sees Hockney as belonging to a British stream of alternative tradition, anti-puritan, irreverent and somewhat mocking, which traces back through the pre-Raphaelites to Samuel Palmer and William Blake.[17] It was Blake who said that poetry should be concerned with 'minute particulars', a philosophy resoundingly echoed by Hockney's work, particularly his drawing full of intelligent detail and anecdotal delight.

This preamble is to justify saying that Hockney's work in paper pulp is far from successful in the context of his other work. Laurence Barker, mentioned already as one of the major figures in the revival of papermaking, says that coloured pulp is the wrong medium for linear artists, since it is impossible to make a sharp pulp line.[18] However,

Rauschenberg's juxtaposition of blurred pulp edges and the sharpness of photographic image in the 'Fuses' seems not just a clever device but an enhancement each of the other. Hockney himself says about his 'Pools': 'I don't know if these pictures are worthwhile, really,.. they probably look better in real life ... because the paper is very beautiful, the surface, there is no such thing as a flat colour, and they are very subtle at times.'[19]

The subject matter of these pulp works is almost a pun; Hockney has depicted many forms of water, showers, pools, sprinklers, water pouring out of pipes, and the idea of freezing a water image that is never still has intrigued him from the early sixties. To make this image in as watery a technique as this ('you have to wear boots and rubber aprons')[20], using Kenneth Tyler's own pool for reference and recreation, pleased him.

They made metal moulds for the variously coloured pulp areas and laid these onto freshly made wet sheets of paper. Hockney added or shifted bits using a variety of implements and fingers after the moulds were removed, and quite often, again after the first pressing. In the end, he used four moulds for twentythree of the pictures, including three enormous ones (72" x 171") using two moulds. The last of these, 'A Large Diver' (Paper Pool 27) is illustrated overleaf.

Pictorially it uses several devices used before by Hockney. There are immediate comparisons to 'The Splash' (1966) and 'A Bigger Splash' (1967) which both have the harsh geometry imposed by the subject of the pool, reinforced in the paintings by the strongly horizontal lines

of the buildings and here by the severity of the paths, grass areas and the black stripe at the top. The diving board is at as vertiginous an angle as that in the 'Splashes'. However, the splash in 'A Large Diver', by the nature of the pulp, misses entirely the linear delicacy of the painted splashes, which are truly startling in their carefully detailed asymmetry. Maybe the pulp splash is too symmetrical and cartoon-like, merely grating against the (impure) lines above it. The diver himself, absent in the paintings, is also crudely rendered, lacking the nuances of either shape or colour that are apparent in the photographs from which Hockney worked.

The water itself is by far the most successful element in the picture. By spooning blue pulps onto the white pages, leaving white areas and allowing for the spread of the blues in the pressing process, Hockney uses the whole tonal range given by the dyes, which in reality is much more extensive and delicate than can be reproduced.[21] He then stroked lines of (probably thicker) pulp on top and allowed them to dry longer before pressing the pages again, achieving a three-dimensional quality with the green surface refractions firmly pinning the blue reflections to the floor of the pool.

The direction of these green strokes changes sharply from one half to the other of the whole picture, as do all the 'perspective' lines, black, grass, path, pool-edges, at the top of the picture. The only smooth directional line is made by the board and the diver, although it is interrupted. Pictorially this enhances the penetration of the water by the diver, and the central action of the splash. This could almost be a happy accident due to using two moulds made at different

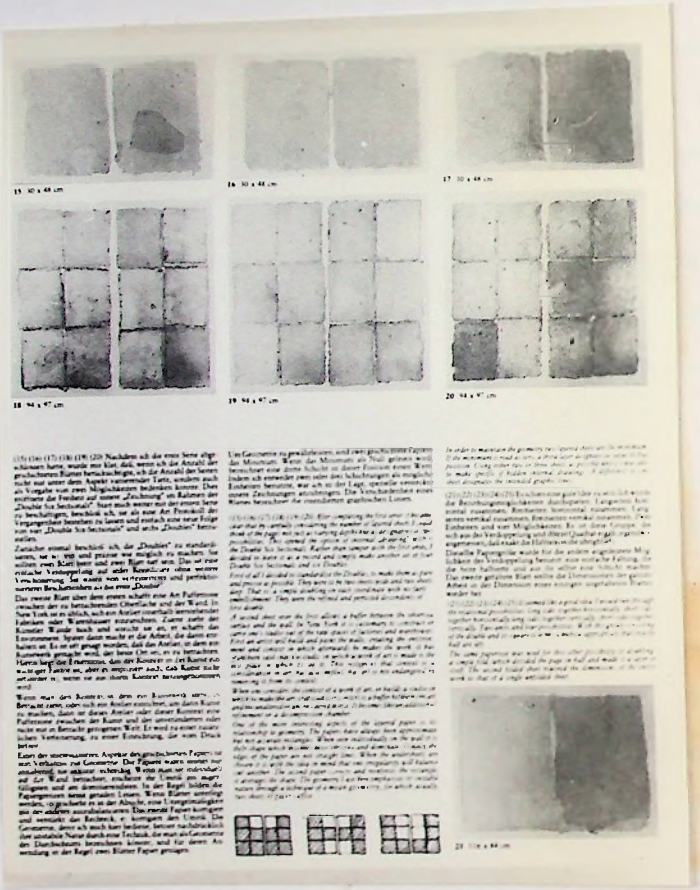
times, but if so, Hockney has pulled together the immutable hard edges with a sweep of reflections that almost cradle the diver and create the most interesting aspect of the work. This directional break is central in the book format, but in reality it continues to be emphasised by the separate framing of the two 'halves', hung touching each other.

It seems the work could have been better achieved as painting, although the particularly beautiful texture of pulp could not, but in terms of papermaking, the best use Hockney made of the material was in the tonal range of the splashes, which he could have used to greater effect in a manner less derivative of drawing. Generally, these works look crude compared to his other work. However, the project did have benefits, in that it was undertaken partly as an antidote to his work becoming 'too grey, too tight. I kept getting finicky, and I wanted to be bolder.'[22] His painting since then does seem by all accounts to have gone back to a freedom and boldness that had been lost in the last few years, when his work seemed almost to parody itself and a certain prettiness? facility? had become imprisonment.

Joel Fisher

Joel Fisher is a young European-based American artist-papermaker, whose interest in papermaking arose as a development of what he calls his 'groundless'[23] painting, in which he put layer after layer of acrylic paint onto glass until it could be peeled off and nailed to a wall. He realised that paper was purer than paint, which requires pigment and medium, and is itself a ground. As he says, paper 'became a zero point for the reductionist tendency I was involved in'[24] and since then, all his work has been in papermaking.

fisher page



Early Work

His initial fascination with the process of papermaking came from the realisation that one plane, the surface of the vat, becomes another, the sheet of paper, by the simple expedient of drawing the screen through the pulp. Initially he placed sheets of paper on top of each other, and placed another double layer beside the first, calling them 'Doubles', i.e. doubled rectangle and doubled sheets, symbolising the two planes. Realising that the two rectangles placed side by side read as an extended rectangle, he built rectangles of six pieces, two across and three down, and then later, doubled them but left a narrow central 'canal' which made these 'Double Six Sectionals' echo strongly the original 'Doubles'. Thoughts of building preoccupied him, the laying of one brick on another, the placing of them side by side to make one wall.

His next step was to realise that through the concealed layering of the paper he could make 'hidden drawings', by building a 'Double Six Sectional' with symmetrical omissions in the layering. He made some more 'Doubles', with a horizontal division rather than a vertical one, and he tried putting the units in rows of three, of four, of five, with almost cabalistic numbering of the internal layering.[25]

New York

His first major work was an extension of his dissatisfaction with the effect of the underneath layer of paper in his 'Doubles', which he felt served as a buffer between the observed surface and the wall. In the same way, he felt that his clothing was a buffer, a

a context inside which he is naked. He made pulp from all his clothing, adding the items sequentially to the beater, and was left with 88 uniformly sized sheets of paper, the small circular sheet incorporating the last of the pulp, and a bag of zips and buttons, which he showed at Documenta. This was his first narrative piece, closely followed by another in which he pulped the packaging of the tools purchased to make the work. On the first day he made six 'Doubles' and re-pulped five of them. On the second day he made five and rejected four, and so on, until the seventh day when he made a blob from the residue, and called the piece 'Rest on Sunday'. He also pulped yellow Metro tickets and re-formed them into tiny sheets of the same size.[26]

He continued his experimentations with 'Doubles' making many more, but sometimes overlapping them to make a continuous line, or placing them so close they welded in places, or bonding one sheet at an angle to the other in many combinations, and also showed a 'snake' made of rejected or leftover sheets strung together.[27]

Germany

In Mönchengladbach in 1975 he showed a major work, a fusing of papermaking and happening. Taking all the available works of the previous seven years, he lined them up chronologically and repulped them in small quantities and re-formed them into 420 sheets, which ran through several colour changes. These sheets were nailed to the four walls of a large hall and shown as one work. This was an even more radically minimalist gesture than his pulping of his clothing, since, as he says in one place, 'I am dissolving my assets' [28] and

in another 'I was about to destroy my credentials'.[29] He had for some time felt uncomfortable in a 'static beauty', that it is when evolution has stopped that forms look solid, and yet the more solid they look, the more fragile and impermanent their position. He said 'the idea and hope was to connect again to a primal, preformal world: to lose a firmness, but to gain a flexibility.'[30]

Italy and The Netherlands

Since Mönchengladbach, his work has become microscopically involved in the tiny hairs left on the paper by the felts. In Italy, he took two designs from these little marks and repeated them with a pen some thousands of times on the walls of a gallery in a work called 'Apograph Extensions'.[31] In Amsterdam, he searched through many sheets of paper until he found marks resembling the numbers one to ten, and the alphabet, and geometric or linear shapes that pleased him, and delineated them in black ink. About these works, he writes, 'Is it possible to see blankness? ... with too much attention, blankness literally vanishes before our eyes ..'[32] He describes the act of seeing through a window, in which the eye automatically rejects reflections or specks of dirt to focus elsewhere; 'blankness is a visual fiction'.[33] But once we focus on the speck, it leaps to our attention, 'independent, amplified and alien, it enters the environment'.[34] Similarly, 'paper becomes a functional invisibility' and 'a plane (paper, window, wall) is a support for thought.'[35] Once a hair spotted on the paper leaps into a familiar configuration, it 'assumes a new (false) history, a range of associations which includes all graphic forms.'[36]

Conclusion

Fisher has written meticulously and at length about the making of all his work. He has recorded the intellectual process leading up to each of his works, and the circumstances surrounding the making of them, often even anecdotally. The glaring omission seems to be any acknowledgement of the sheer beauty of his work, except once negatively, when he was on the point of destroying it all in Mönchengladbach. And yet it is the physical and very sensuous beauty of his work which strikes one immediately after its blankness. Whether it is as a result of his conformist German-American background, or whether it is that he trained at a time before the pleasure principal was permissable, it seems a shame that he should use such a sensuous material without exploring further that particular quality. His early preoccupation with the raggedness of paper-edges shows a consciousness of their delightful deviations, but his methodical 'games' with the sheets resemble the obsessional quality of Beckett's 'Watt' who was consumed by the permutations of cycling 5 sucking-stones round his four pockets to his mouth, so they would get equal wear. Although he now uses papermaking 'accidents', his attention is no longer focussed - literally - on the paper itself, so that one wonders whether he will shift away from this material into work more directly involved with optical truth and illusion.

In fact since this was written I have learned that his most recent work is wooden sculpture using the shapes that he had been inking.

Brian King

Trained as a sculptor, Brian King now belongs loosely to the international Land Art movement, although he differs from this movement in that his work is full of associations to his own personal recurring themes. He has used pulp in some works which describe his obsessions with time and disintegration, two themes which are constantly important in all his work. His work over the last ten years has become very involved in self-destruction, that is, the total effacement of the art work itself. He describes his recent work as 'biodegradable', incorporating its own destruction. In fact, in the case of his Rosc 1980 piece, 'Ghost Train II', the disintegration process was not inherent in the piece, so King formally sawed it in half.[37]

His involvement in paper pulp started after his embossed prints, 'Parcel Series', which he regards now as having been overpermanent. Initially he worked on some pieces which he describes as fragments involving disintegration, made with mould-made waterleaf paper which he repulped. To emphasise the change of this 'quality paper' into fragile, impermanent works, and also to deny the reverence that is usually given to 'good' paper by the art world, he mounted them in very heavy and deep wooden frames, giving them a 'museum piece' quality. He says he enjoys destroying sacred cows.

Following these pieces, and again using expensive Bockingford paper, he made a series of relief prints in which iron filings were left on a wet area of the page and then rinsed off, leaving a stain of rust, which, over an incalculable period, will corrode and

entropy circle

ultimately perforate the paper, thereby 'destroying' it. As a development of this, as he calls it, 'Dorian Grey' destruction motif, he has made a series in which the rust is beaten into the sheet and left to provoke disintegration even more rapidly. He had planned more pulp pieces for his most recent exhibition, but facilities were lacking. He intends, whenever he can, to make a further series in paper pulp using the brittleness and fragility of unsized pulp on the theme of disintegration.[38]

'Entropy Circle' (see over) is one of the 'beaten rust' series, and illustrates very well one of his main current themes, that nature does not tolerate geometry. It uses one of his frequent devices, the circle/cycle, a particularly apt symbol of decay and regeneration. In this case, the original perfect circle is being broken down by the natural process of rust and will attain nature's own shapelessness.

His use of the traditional flat page to describe such three-dimensional activity as corrosion seems excellent use of the medium. His use of paper pulp purely as a material through which to transmit his own preoccupations in this post-conceptual manner seems very fitting to his art, in the same way that he will use great baulks of timber in another project. At the same time, he is very conscious of the physical properties and the aesthetic qualities of all his materials, which he uses and acknowledges without allowing them to seduce him from his own intent.

Footnotes:

1 Kenneth E. Tyler, "Experiences with paper: the commercial workshop", World Print Council: Paper - Art & Technology, San Francisco 1978

2 John Brzostoski, "Douglass Morse Howell, Scholarship, Skill, Vision", AmericanCraft, Feb/Mar 1981

3 Three articles from Special Section:
John Loring, "American Prints from Fuses to Fizzles";
Irena von Zahn, "Multiple View";
"Reproducibles" ; Art in America magazine, Jan/Feb 1977

4 Editor Pauline Long's note to two articles by Kenneth E. Tyler and Rosamund Felsen, "Two Rauschenberg Papermaking Projects", WPC ibid

5 Calvin Tomkins, Ahead of the Game (originally The Bride and the Bachelors) (London, Widenfeld & Nicolson, 1962

6 Andrew Crispo Gallery, "Twelve American Masters of Collage", New York 1977

7 Dorothy Gees Seckler, interview, "The Artist Speaks, Robert Rauschenberg", Art in America, May 1966

8 Barbara Rose, American Art since 1900, (London, Thames and Hudson, 1967)

9 Catalogue: Robert Rauschenberg," Pages and Fuses and other prints", an Arts Council exhibition, London, 1975

9a Kenneth E. Tyler, "Rauschenberg's trip to France", WPC ibid

10 Rauschenberg catalogue, ibid

11 ibid

12 Rosamund Felsen, "Rauschenberg's trip to India", WPC ibid

13 Robert Rauschenberg, National Collections of Fine Art, Smithsonian Institute, Washington, 1976

14 Interview with Kathryn Clarke, Co-Founder of Twinrocker Inc., in Edinburgh, November 1980.

15 David Hockney, Paper Pools, edited by Nikos Stangos, (London, Thames and Hudson, 1980)

16 Pictures by Hockney, Intro. by Hockney, selected and edited by Nikos Stangos , (London, Thames and hudson, 1978)

Footnotes:

17 Hockney Paintings and Drawings, Introduction by Stephen Spender, Musée des Arts Décoratifs, Paris 1974

18 Laurence Barker, talk given at Edinburgh Papermaking Symposium, November 1980

19 Hockney, Paper Pools, p 100

20 ibid, p 21

21 This work was exhibited at the Edinburgh Papermaking Symposium, November 1980

22 Hockney, ibid, p 100

23* Catalogue: Städtisches Museum, Mönchengladbach, 1975

24 ibid

25 ibid

26 Catalogue: Museum of Modern Art, Oxford, 1977

27 Catalogue: Mönchengladbach, ibid

28 ibid

29 Catalogue: Oxford ibid

30 Catalogue: Mönchengladbach ibid

31 Catalogue: Galeria Marilena Bonomi, Bari

32 Catalogue: Stedelijk Museum, Amsterdam, 1978

33 Catalogue: New 57 Galery, Edinburgh, 1978

34 Catalogue: Amsterdam ibid

35 Catalogue: Edinburgh ibid

36* Catalogue: Amsterdam ibid

37 Catalogue: Brian King, riverrun, Project Arts Centre, Dublin 1981. Text by Frances Ruane

38 Interview with Brian King

* Footnotes 23 to 36 inclusive: all texts in catalogues by J. Fisher

Chapter Five:

Works in Paper

Various the papers, various wants produce,
The wants of fashion, elegance and use,
Men are as various, and if right I scan,
Each sort of paper represents some man.

attrib. to Benjamin Franklin, 1787

Paper as Art

This section deals with a small selection of works by artist papermakers. They range from the flat support to the totally sculptural, and they illustrate to some degree the possibilities of the material and of the adaptation of traditional and experimental techniques.

Paper is as ubiquitous and as versatile as bread - one wonders why not 'a loaf of bread, a jug of wine, a sheet of paper, and thou'. But it is also to an extent invisible - the blank white rectangle answers the concept of 'paper'. Now it is being 'torn, cut, folded, spindled, or mutilated in many ways. It may be burned, scored, exploded, waxed, dyed, glued, curled, sewn, taped, shaped, stamped, heated, cast, rolled, distressed, crumpled, sawn, drawn on or painted. It may be used as a support for lithographs, intaglios, reliefs or screen-prints. It may be used for collage, assemblage, frottage, papier colle, or three-dimensionally as pulp in moulds. It may be burnished, hammered or embellished with fibres, feathers, gold and silver leaf, wire, found materials or mica. It may be made waterproof, fireproof, insectproof, couched (sheet upon sheet), and vacuum formed.' [1]

Here are some exponents of the 'black art' of printmaking, the 'white art' of papermaking, or both.

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1 Jules Heller, paper as art: a contemporary gallery, (Paper-Art & Technology, the World Print Council)

John Babcock:

Luna 38

Cast paper

This is an example of John Babcock's interest in the physical qualities of pulp. He textures the sheet by manipulating it with hands or tools, or by dropping water from different heights, not only exploiting the textures of the pulp, but also creating satisfying drawings which have a geological quality. His interest in his Californian environment, including the San Andreas fault of which every Californian is very aware, extends also to space travel and the textures of planets other than Earth.

Illustration: Thelma R. Newman, Innovative Printmaking, p 193

John Babcock

Fissure

cast paper

Here Babcock has used the pulp in a completely sculptural way, and yet the idea of pages remains, referring back to the material. He has laminated many sheets of thick paper which were made on a deckle incorporating the 'fissure', so that the inner edges are rough. The bowed shape in brilliant colours has strong rainbow connotations, though in black and white. The more immediate references are old tyres, split and layered, or tarmac with a central white line, ideas of th the California freeway along the rocky coast.

Illustration: WPC, p 100

Catherine Babine:

Manuscript series no. 4, 1977

handmade paper, collage, relief

Catherine Babine makes her collages by double or triple couching, using differently sized screens and manipulation with various implements. She often incorporates small objects, in this case a chain, which will eventually react with the paper. She has also used a thin paper cast of a face, a medieval illustration, Gothic lettering and a relief-printed crown, which all combine with the heavy deckle of the sheet to produce an historical fragment.

Illustration: Jules Heller, Papermaking, p 124

Laurence Barker:

Untitled, 1977

Handmade paper, collage

As can be seen from this illustration, Laurence Barker uses a variety of methods from shaping the sheet, piercing the paper by attaching objects to the screen, crumpling the pulp and drawing in it when it is wet, collaging and embedding elements, laminating the sheet to a fresh wet background, and often using ink, pencil or stencil when it is dry.

Illustration: ibid, p 125

Nancy Genn:

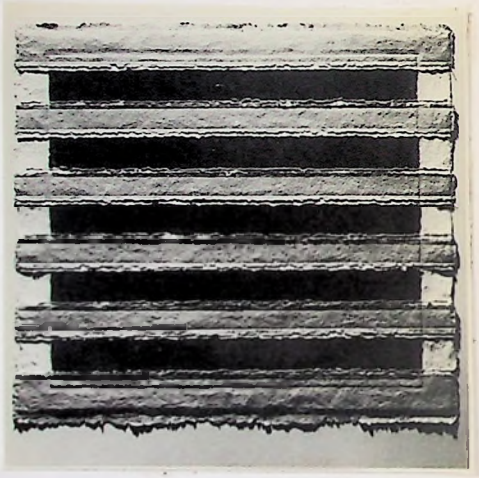
Marshfield No 23, 1977

Handmade papers, layered, embossed

Nancy Genn makes 'sandwiches' of various coloured or fibred pulps, and carefully pulls away strips when the sheets are still wet. She often embosses the work to accentuate or provide contrast to the deckles and torn edges.

The intense colours, not otherwise possible outside the field of plastics, and the textural richness that she exploits, give her simple compositions a very direct and satisfying quality.

Illustration: World Print Council, p 103



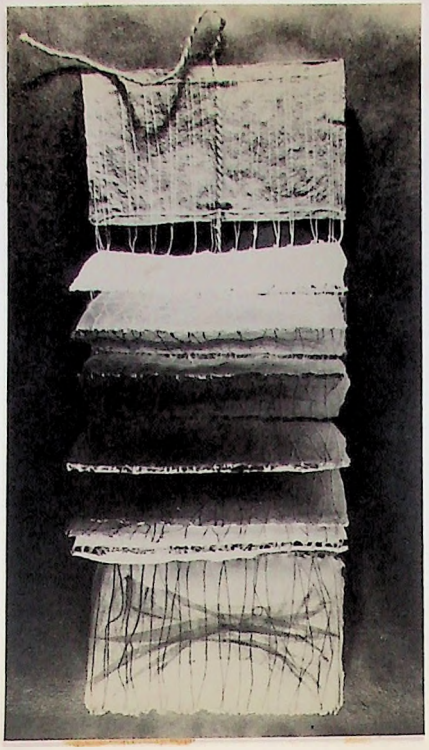
Carolyn Greenwald:

Book for Lourdes, one of a series of five

Mexican and Oriental papers, string

Fascinated by the transparency of Oriental papers, Carolyn Greenwald's early work consisted of sheets of translucent paper often folded at the edge, with embedded fibres or string casting shadows, and with small areas of opaque pulps. More recently she has become involved in the historical presentation of paper, in this case derived from early Japanese books. Shadows are also made by overlapping folds in the natural colours of the paper.

Illustration: ibid, p 104



Charles Hilger:

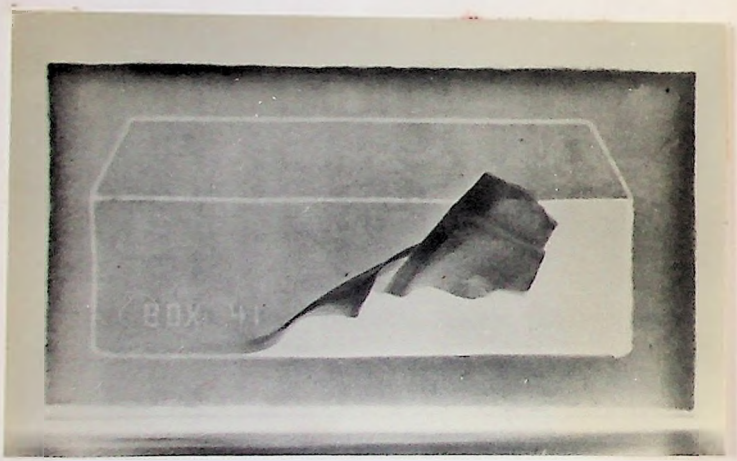
Box 41, 1976

Handmade paper on a line-laid screen

Three illustrations of Hilger's work are included, to show a progression over three years from concern with technique to an almost painterly use of the material to a completely sculptural work.

The first illustration shows a work in which Hilger used the idea of a watermark to make his image, and further tore the pulp in its wet state making a three-dimensional element. The sharp lines of the box image are a complete contrast to the quality of the torn, dried paper, illuminated from behind.

Illustration: Newman, p 181



Charles Hilger:

Starting Down, 1977

Handmade paper

Hilger says of his work, 'the whole of contemporary society uses paper as a carrier of statement and image. By reversing that condition, (it) is the paper that becomes the image ... to involve colour and/or foreign materials would negate my statement.'[1]

This work uses many tiny strips of paper placed on their edges to create an intricate relief which contrasts with the the flat sheet beneath. The upper edge of the sheet is curved, highlighting the varied density and profiles of the shadows.

1 and Illustration: Heller, p 137

'77

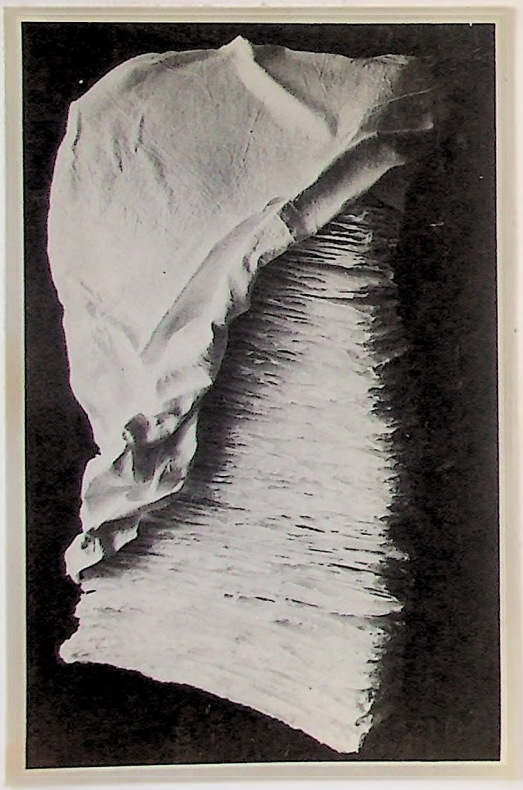
Charles Hilger:

Discovery Series (Bow) 1978

Vacuum-formed paper

The traditional sheets of paper are stacked to make a layered, textured and bowed column. A large sheet of paper is used as a wrapper, partially crumpled back. There are historical allusions to the sheet of paper and to its use as wrapping material, but the use here is completely sculptural; the stacking of each flat sheet results in a three-dimensional solid, and the whole is enveloped, concealed (as the usually informative surface of each sheet is) by the wrapper which yields its shape ann its flatness to the whole.

Illustration: World Print Council, cover



Louise Nevelson:

Dawn's Clouds, 1977

Cast paper relief

Unlike the other artists in this selection, Louise Nevelson is hardly a young experimental artist. Born in 1900, she could be regarded as a 'grand old lady' of sculpture for her monotone quasi-architectural constructions, with a strong emphasis on shadow, but she has also been a keen printmaker for many years.

This work is very much a translation of her ideas to cast paper.

Illustration: Heller, p 147

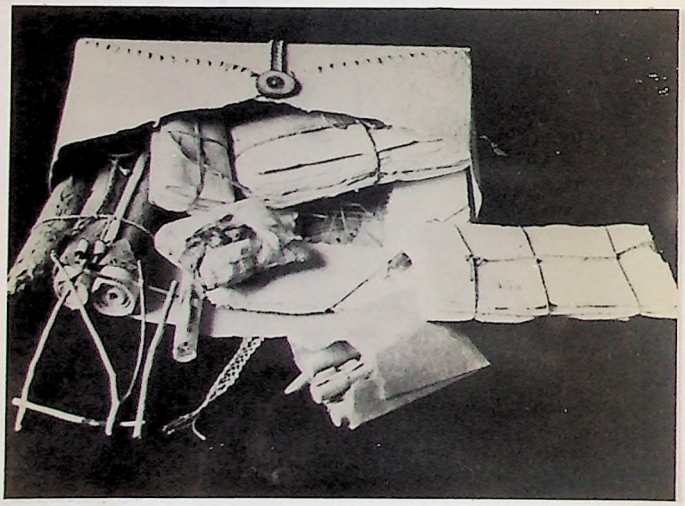
Bob Nugent:

The Ancient Mariner Series, The Primrose, 1978

Handmade rag and mulberry papers, wood, bone, raffia, conte, 19th century english letters, sea urchin spines, hemp

Bob Nugent's work includes a highly narrative element. His earlier series called 'Kept Letters' led to the present 'Ancient Mariner' series. Both are very involved in souvenirs, memorabilia, personal effects, tokens, letters of authority, love letters, journals, ships' logs, records. They involve the manufacture of enigmatic 'found objects' with connotations of archaeological, historical and personal images which he rightly calls inventions'.

Illustration: World Print Council, p 107



Richard Royce:

Sea Sphere

Cast paper

Royce, a graduate of S.W. Hayter's Atelier 17 in Paris, now runs his own Atelier Royce in New York, exploring and inventing papermaking and printmaking techniques. He has cast paper reliefs from carved wooden and metal plates, then brought his castings around corners to print three-dimensional shapes in the round. This piece was achieved by casting in plaster and inking up a rubber balloon which was then used to transfer ink to the sphere.

Illustration: Heller, p 116

86

Garner Tullis:

Zabie, 1976

Handmade paper and gauze

Tullis, innovator in papermaking, makes his heads in clay, covers them with a cheesecloth backing and then works the pulp by patting, pushing and spattering. This work carries the basic contradiction of producing a traditionally sculptural form in a material as light as a paper a step further by having been treated with an acrylic spray, powdered graphite on the wet spray and then buffing, to give it a metallic sheen.

Illustration: Newman, p 192

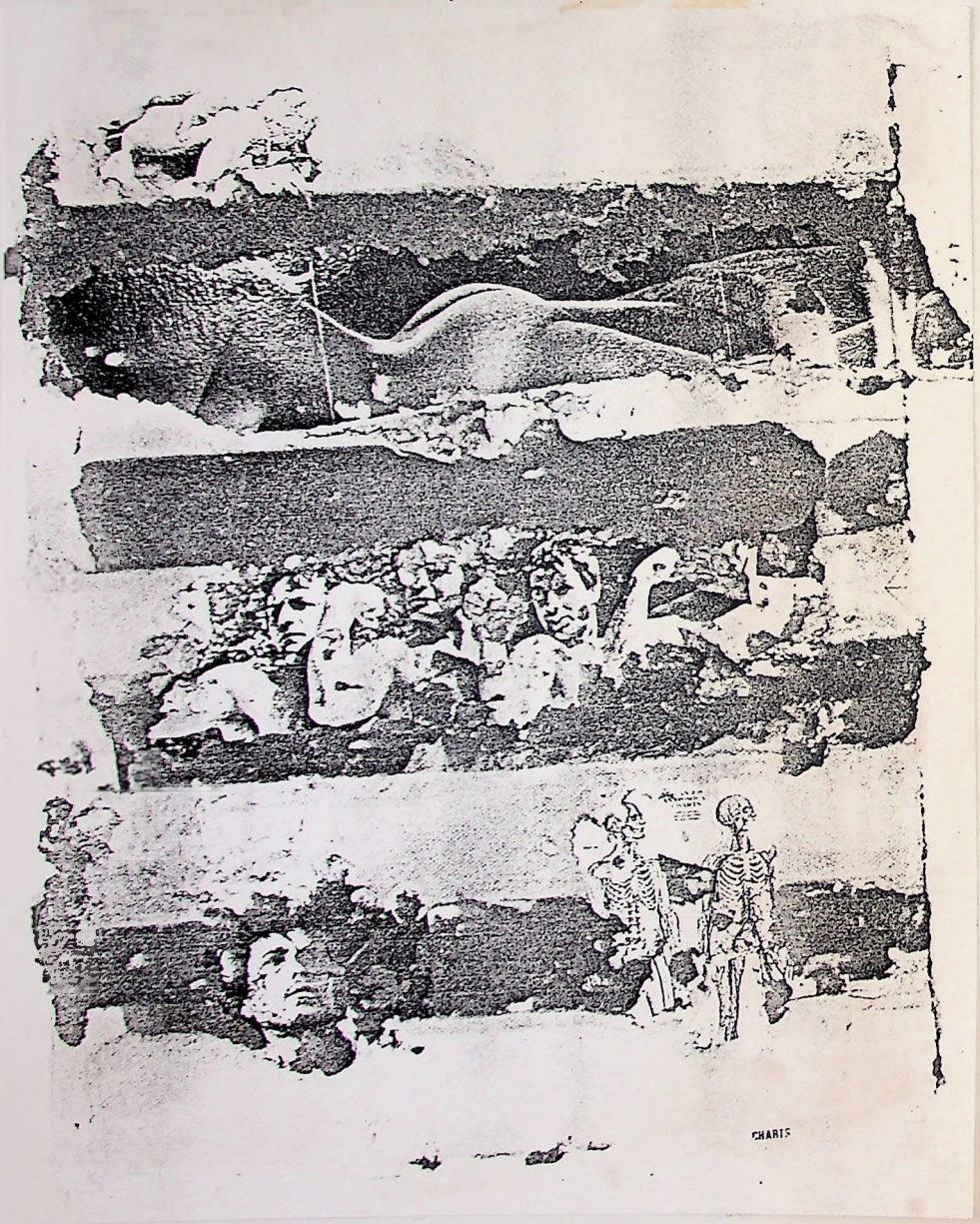
William Weege:

Untitled, detail, 1976

Collage embedments in handmade paper, forty panels

William Weege's privately sponsored Jones Road Print Shop and Stable is a workshop in which all traditional and experimental media may be practised. In a work like this, the illustrated elements may therefore be any form of hand or commercial printmaking. The pulp, used as a bonding and separating device, also adds textures and colours. He has also made extraordinary constructions of irregular string mesh over a wooden frame, dipping them into pulp, drying and painting them and detaching them from the frame to make ethereal cobwebs of paper.

Illustration: Heller, p 158


CHARTS

Chapter Six:

The validity of Papermaking as Art

The validity of papermaking as art

There have always been artists who have worked in several media, but the mechanisation of so many processes over the last hundred years has led to many changes of function and new classifications have arisen. Thus the decline of the craftsman printer, brought about by industrialisation and increasing sophistication of printing processes, led to the development of the artist-printmaker, and now, due to historical, technological and economic reasons as well as recent developments in art itself, we are seeing the emergence of another new area, that of the artist-papermaker. Just as the artist-printmaker may choose to confine his work to printmaking techniques, and ignore other disciplines, so now the artist-papermaker chooses to work with one staple material.

There are two basic concepts involved in papermaking as art. One derives from collage, the other from sculpture, and they can be variously used by purists in one direction or the other, or combined.

Collage, almost three-quarters of a century since its first use by the Cubists, now has a history and a tradition behind it. The legacy of collage in papermaking includes the notion of the unique object, the elimination of drawing, the importance of the manual gesture, the idea of recycling, but most particularly, the willingness to experiment. As Robert Johnson says, "We happily live in an artistic era that more often asks 'why' than 'why not'"[1], and John Cage, speaking of Rauschenberg's use of non-art materials and incorporation of objects, says, "beauty is now underfoot wherever we take the trouble to look."[2]

The idea of the unique art object in printmaking came about as a reaction to the many prints produced to fill the print boom in the Sixties and early Seventies, which were immaculately identical, often slick and cold, and many of which were surrogate paintings multiplied. The interest in editioning waned, the accidental became intriguing, and now there is an emphasis on the unique art object in all its aspects which is carried almost to extreme in papermaking, since, by the nature of the basic material, pulp, no two works can be identical.

Collage led to the gradual elimination of the use of drawing to make images, culminating in the Pop Artists' use of photographic material. The tactile qualities of collage, particularly important in mixed-media works, expand even further in the manual gesture of handling pulp, which can handle like paint, or wood or plaster, or cloth, or more simply, like paper.

We are in an age of re-cycling as well as oneof preservation, and this century particularly has been a period of the re-cycling of ideas. Paper itself in its classic form is the great re-cycling material, but collage has brought about the re-cycling of images, abetted by photography, so that it is now possible to make enormously intricate layerings of reference, spanning any time, in comprehensible format.

The sculptural view of paper stems, at its simplest, from relief printing. Blind embossing was, after all, the earliest form of printing, and in the 18th Century, Suzuki Harunobu produced the earliest gauffrage prints in Japan.[3] Drawing showed near-dimensional ways of using the surface of paper, by marking with various tools, scratching (as in metal and silver point) or scraping.

Pages themselves have many three-dimensional possiblities, ranging from scrolls to origami, cutting, perforating, ribboning, curling, shredding, confetti, warping. Sewing or adhesives can be added, and the list multiplies.

If pulp is used as the basic material, transforming the fragility of paper into whatever strength one wants (paving slabs have been made from paper, and even churches built)[4] the possibility of dyeing in delicate or brilliant shades is retained, as well as all the surface treatments that come from painting and drawing, and the sculptural possibilities of paper seem endless.

In any use of a new material or technique, or, as in this case, new techniques from an old material, there is always the fascination of how something is made, or how it works, the lure of the manipulation of the principle or the cunningness of the mechanism at work. In terms of use of material in art, this can be merely the shock of the new, and not necessarily of itself a valid art statement. There are particular pitfalls in the use of such a versatile and seductive material as paper. So the conclusion of this thesis must rest on the earlier statement that paper was invented as a thought support, and this criterion must continue to apply.

Perhaps the last word should be left to Laurence Barker, who did so much to bring all this about:

"It is precisely in the hyphen between support and medium, where ground becomes figure, that much untapped poetry resides: acting paper that is in turn acted upon. Paper projects itself in shape,

texture and colour and simultaneously is a vehicle for drawing, painting and printing. Like a rheostat, paper can easily be dialled down, as it were, to the near-zero assertiveness of pure support as it can be cranked up through stages to an intensity of activity that is pure medium."[5]

Footnotes:

1 Robert Flynn Johnson, curator, Fine Arts Museums of San Francisco, Panel discussion Experimental approcaches to paper in art

Paper - Art & Technology, WPC ibid

2 John Cage, catalogue introduction to Rauschenberg's exhibition in the Whitechapel Art Gallery, London (1974)

3 Garner Tullis, Panel discussion ibid

4 Hunter, ibid, pp 577 and 518

5 Papermaking in Spain (and America) , Printnews magazine, (LB 1980)

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