Notes on the History of Origami

by John S. Smith

PREFACE TO THE SECOND EDITION. Updated 28th April 1996.

I issued these notes first of all in 1972 with revisions in 1973 and 1975. The publication is not intended to be a history of paper folding or Origami but brings together what is available with references and notes. My hope is that it may stimulate further research into the history of art and put our historical knowledge on a sound foundation. This edition (1996) includes additional information which has come to my attention since the last revision. I hope anyone who has further information or corrections will let me know so that I can keep the work up to date.

John Smith
Norwich
England
e-mail: jon.pure@paston.co.uk

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1. PAPER & PAPER FOLDING

The origins of paper folding for pleasure, or as a symbolic art or craft are far from clear. Many authors (4), (2) and (15) have associated paper folding with the discovery of paper, apparently assuming that a knowledge of paper is necessarily accompanied by paper folding for symbolic, ceremonial or artistic reasons.

Since the availability of paper is an obvious prerequisite to the development of paperfolding, it is worth stating what is known about the discovery and spread of paper (25).

Paper making is believed to have started about 100 A.D. in China, and the discovery usually is credited to Ts'ai Lun a Chinese court official. Prior to this many different substances were used for recording, such as papyrus, parchments and vellum, cloth, bark, etc. The Chinese in particular used woven cloth as a writing material. The first paper was probably made from disintegrated cloth, but
bark and other vegetable materials were soon employed.

[For some 500 years paper-making remained a secret of China. At the start of the 7th Century, it was spread to Japan by Buddhist monks and manuscript books were made from the paper mulberry tree.

In 751 A.D. the Arabs occupying Samarkand were attacked by the Chinese - in repelling the invasion certain prisoners were taken who were skilled in paper-making. The paper-making art then spread westwards following the caravan routes. It reached Egypt in the 10th Century.

We have excluded Papyrus from this discussion - it is not suitable for folding.

In the 12th Century the Moors established paper-making in Spain in Jativa.

Through the Arab occupation of Sicily the secret reached Italy. The paper both in Italy and Spain was of oriental quality. Paper mills appeared in Fabriano, Italy in 1276 and Troyes in France in 1348. By the second half of the 14th Century the use of paper for literary purposes had become well established in Europe. Paper was used in England at the start of the 14th Century, but it was not until later in the 15th Century that John Tate, the first English paper manufacturer, set up a mill in Hertford.

The first paper mill in North America was built in 1690 at Roxboro (Pa.).

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2. CHINA

See Appendices 1.0 and 1.3

Sakoda (1) argues that the traditional Chinese Junk fold is not popular in Japan and leads to the suspicion that paper-folding was developed, at least in part, in China. Honda (2), however, points out that no documentary evidence exists for insisting on a Chinese or Korean origin. Some writers seem to be more convinced of the Chinese origin of paper folding. For example, Alice Gray (3), writes that traditional Origami models have been current in China for perhaps 1,000 years, and both the Japanese and Spanish movements derive from these.

Philip Shen (3), who is himself of Chinese stock, feels that paper-folding was probably of Chinese origin.

In China, the use of coins made from paper covered with foil, paper houses, etc., to be burned in funeral rites is noted as one of the earliest examples of paper-folding by Kallop (4) and Harbin (5). The latter author also describes the use in China of paper sculpture, and one of the earliest forms of entertainment - the
manipulation of pleated paper which we know as Trouble-Wit (5).

As with so many other things, Chinese inventions, including paper, and possibly paper folding, were introduced to other countries. Sakoda (1), suggests that paper-folding may have reached Japan in this way and Kallop (4), points out that as a result of an 8th Century Chinese attack on the Arabs at Samarkand, the latter learnt the secrets of paper making and introduced it to the West, the inference being that paper-folding may have accompanied this.

Palacios (6), points to the possible introduction of paper-folding during the days of the Moorish occupation 1,000 years ago.

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3. JAPAN

See Appendices 1.1 and 1.4

Wherever the origin of paper and paper-folding, there is no doubt about the regard with which the material has been held in Japan. Kallop (4) refers to the intrinsic regard for paper in Japan - almost without parallel in the West and suggests that Origami (Japanese for paper-folding) has an ultimate connection with Zen. In Japan, Kallop states, Origami is at once an art that shares equal rank with painting and sculpture and is complexly linked with stylised traditions such as ceremonial etiquette and paper decorations attached to gifts (Noshi).

Honda (2), points out that in early times paper would be too expensive to use for a pastime, so Origami was rigidly fixed and limited to ceremonial occasions. The oldest example he quotes are male and female paper butterflies used to decorate Sake cups at wedding ceremonies.

Japanese history is often discussed by reference to so called 'periods', usually named after the place of government or seat-of-power of the time. There are slight variations in the dating of these periods and I shall use those given in the 1969 edition of the Encyclopaedia Britannica.

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4. HEIAN PERIOD 794 - 1185

The earliest evidence is given by Peter Van Note (7). He gives details of a Japanese manuscript in his possession dated about 1850 which describes paper folding according to ancient practises. He feels it can be proved that the manuscript refers to paperfolding of the HEIAN period; during this period there was elaborate ceremonial folding and simple recreational. The waterbomb base was known -
probably used for ceremonial butterfly figures. These are almost certainly the same figures referred to by Honda (2) and used to decorate Saki cups at wedding ceremonies - the oldest examples known. Noshi is credited to the later part of the 12th Century when the formal custom of paperfolding developed (8).

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5. KAMAKURA PERIOD 1185 - 1333

Antiquarians in the middle of the 13th Century in compliance with orders from Kamakura Shogunate integrated matters of manners and etiquette observed previously, including ceremonial folding (8).

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6. MUROMACHI PERIOD 1333 - 1573

'Modern' Origami is held by one writer (9) to have developed 'in principle' during this period. The buffoon, comical little man Yakkosan was folded during this period according to Lewis Bush (12).

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7. EDO PERIOD 1603 - 1867

See Appendix 1.2

Uchiyama (10) writes that by the middle of the EDO period Origami had become a popular pastime in Japan. The earliest definite citation according to this author occurs in a work published in 1682 which makes reference to a 7 year old child playing ORISUE (as Origami was called), and making birds and flowers. According to Harbin (5), books on Origami appeared from about 1704 and on to 1739. Kallop (4) also notes that books on Origami with diagrams and instructions for folding decorations were published as early as the first quarter of the 18th Century (26).

A reference to a box of pre-folded Origami samples, Gohyaku Oribako, dated 1728, is made by Yoshizawa (11).

A book called Chusingura Orikata, dated 1797 (18 1/2" x 13") which gives Origami figures of the main characters of a Kabuki play is mentioned by Honda (2) and by Takahama (13) who also points out that the book contains advertisements for other Origami models.

The book, "How to fold 1,000 cranes", Senbazuru Origata was also published in 1797 according to Yoshizawa (11). Takahama (13) confirms this and adds it was
About 1850 the famous Kan-no-mado was published - this is mentioned by Sakoda (1) and others. Honda (2) says the scholar Katsuyuki compiled the fragments in 233 small volumes and recopied it. Vol. 233 is on Origami and offers 10 ceremonial folds and 30 'pastime' models. Honda says we cannot be clear about the meaning of Kan-no-mado which literally means "A widow for the cold season". Takahama (13) is reported as saying that the Kan-no-mado was by the Chief Abbot of Choen.

Copies of this book (Vol. 233) can be obtained in the USA from the Origami Centre.

During this period Takahama (14) notes that paper folding became popular.

An article (9) states that by the end of the EDO period more than 70 shapes were known, including the Crane, Frog Ball and Helmet. Yoshizawa (11) notes that during this period the folding of Hina dolls became known. Harbin (7) quotes Peter Van Note as the source of this information that in the early part of the EDO period the Crane or Bird Base occurs, but the Frog base not until 1800. Sakoda (1) notes a reference in 1856 to a merchant in Asakusa of Tokyo who by folding paper could produce any desired figure.

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8. MEIJI PERIOD 1868 - 1912

It is reported (9) that during this period Origami became included in school and kindergarten programmes as a means of educating children in the art and skill of using their fingers.

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9. TAISHO PERIOD 1912 - 1926 AND TODAY

Special Origami paper, 15 cm x 15 cm is now reported (9) as widely sold, thus helping Origami become popular for pleasure and education.

Until the last few years non-ceremonial Origami in Japan in the 20th century appears to have been considered as merely a children's pastime except for a few great folders.

The re-organisation of Origami as a creative art in Japan has largely been due to the efforts of: Isao Honda, who published his 'Origami' in 1931, Akira Yoshizawa, who has been the dominating genius for many years, and first published in 1952, and Michio Uchiyama, who learnt Origami from his mother (born in about 1840),
who regarded it as her favourite pastime. Michio, in 1908, was awarded a patent for a new kind of Origami which he called Koko-styler, and in 1931 he had a public exhibition in Tokyo. Michio's son, Koshio, has also become an outstanding folder.

Since the end of the second world war, new folders and a wealth of new books have been published by such talented authors as Takahama, Nakano, Kawai, Kasahara and many others. Many societies have been founded, particularly the International Origami Society by Akira Yoshizawa.

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10. SPAIN

Palacios in his detailed writings (15) and letters (6), has argued that in Spain paper folding developed separately from the Japanese from the time of the introduction of paper by the Arabs.

The most ancient model known is the PAJARITA (from the Latin PASSER for sparrow). Palacios believes it was originated prior to the 16th Century and quotes a reference to it (16) by a Spaniard writing on pastimes in Venice. In Spain, in primitive paper folding, the principle is followed of pure folding - no cutting or gluing - and this is visible in the genuine art of the "Pajaritas". From this simple figure other models were developed such as the Cap, Ship, Bonnet, Octagonal hutch and the Ships of the King and Queen. This latter model is known as the Chinese Junk, but Palacios argues for its Spanish ancestry.

Two modern giants of Spanish paper folding were Unamuno, who wrote on the subject in 1902 and Solorzano, who learnt local creations from his mother, and developed a system of bases. He first published his work in 1928.

Japanese ideas, particularly the flapping bird, reached Europe and probably Spain at the end of the 19th Century

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11. ENGLAND AND EUROPE

There are tantalising glimpses of folders and possible origins of our art of over the centuries - probably independently of Japanese influence until about 1900.

Kallop mentions the wonderful napkin folding practised in the 16th Century - many of these folds are now regarded as a part of Origami. (Honda (8) also discusses napkin folds in Japan in his book on Noshi). In Europe, these napkin and other cloth folds may well have been a source of paper folding ideas. We hear from various sources of interest many prominent people had in paper folding.
Kallop (4) mentions da Vinci's exercise in geometric paper folding in Codex Atlanticus, Lewis Caroll (See Appendix 1.5) and Shelley are described as ardent followers. Yoshizawa (1) adds Victor Hugo to the list.

The Times Review (17) makes intriguing mention of a William Hine who saw a blind man in the park folding paper and making various figures some years after 1786. Details of the flapping bird were published in Paris in 1889 (18). Froebel published his notes of education and paper folding in about 1874 (22).

A number of books appeared, mainly repeating traditional Japanese models in the next 50 years, for example, the 'classic' by Campbell (19).

But it is to G. Legman we must look for stimulating great interest in paper folding. In 1952 he published his definitive 'Bibliography of Paper Folding'.

Bob Harbin also has a passionate interest in paper-folding. He started a T.V. series in 1955 in England titled "Mr. Left and Mr. Right."

This aroused tremendous interest and led to his important book 'Paper Magic' in 1956. Perhaps one of the most important and influential books on paper folding ever to appear.

In 1965 Sidney French started his portfolio Group in the UK and in 1967 the British Origami Society was founded - it now has one of the most important libraries on Origami in the world and its membership is world-wide.

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12. USA

Many books have been published in the USA on paper-folding, for example, Bamberger 1891 (20) and Lutter 1899 (21). But for the really important movement we must look to Lillian Oppenheimer - a passionate disciple of Origami for 40 years.

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13. LEWIS CARROLL AND PAPER FOLDING

As an admirer of the Rev. Dodgson and a student of Origami, I was very interested in the note by Kallop (4) on Lewis Carroll's interest in Paper Folding, in fact Kallop refers to him as an eminent paper-folder.

On many occasions, the remarkable relationship between religion, magic and Origami have been apparent. It seems true for Lewis Carroll as well.
Thus we read (32):

"The boy was a clever conjuror, and arrayed in a brown wig and a long white robe used to cause no little wonder to his audience by his sleight-of-hand."

"... and he was very clever at manipulating the innumerable strings by which the movements of his puppets were regulated."

The earliest reference to paper folding I could find in the letters and diaries of Carroll was in 1889 (32) when Carroll was 57.

Page 285

June 7th 1889, Hatfield. "With the Duchess of Albany's children - Princess Alice and her brother, Duke of Albany

and folded a fishing boat for them .. "

Notice the reference is only to a fishing boat.

A year later we read (33):

1890 - Oct. 2 (Th.) - "Called on Mrs. Fox with whose children I began an acquaintance at the concert the other night: Annie (aged 8) and Stanley. Today I borrowed the children for an hour and took them to my lodgings and folded fishing-boats for them, etc."

Once again only fishing boats are detailed.

Six days later (33), we have the fascinating entry:

1890 - Oct. 8 (W) - "Went to Hastings, by Mr. Patmore's Invitation, for him to drive me over to the farmhouse at Westfield, which he has taken for the summer.

, and the little boy Francis Epipharius (Piffy), a very bright little creature, who taught me how to fold paper pistols"

So Carroll learns a new fold and we find mention in subsequent entries (32 & 33) of both folds.

Page 297 - 1891 - Oct.

"Princess Alice and the little Duke of Albany, however, paid him a visit, and were initiated in the art of making paper pistols"

1891 - Nov. 16 (M) - "A remarkable day. The Duchess of Albany is at the Deanery with her children and sent the children to my rooms soon after 10."
and I taught them to fold paper pistols "

1897 - Jan. 26 (Tu) " In the afternoon, I went to Godalming and had tea with the Vicar, and folded a fishing boat and paper pistol for his little Mary".

1897 - Aug. 28 (Sat) "Fetched Edith Wardell to tea, and little Nora Charrington, aged 7, for whom I folded a fishing boat, etc.,"

I can find no other direct reference to Lewis Carroll's interest in Paper-Folding. I am sure he was fascinated to learn a new model - what a tragedy it doesn't seem to have occurred to him to develop his own models - he would have enjoyed doing so and Origami would have been the richer.

Since the preparation of the notes on Lewis Carroll a book has appeared by John Fisher (34) in which is included a section on Lewis Carroll and paper folding. This quotes from reference (32) as follows:

" We were playing on the fort at Margate, and a gentleman on a seat near asked us if we could make a paper boat, with a seat at each end and a basket in the middle for fish "

Reference is also made to Tenniel's illustration of the Walrus and the Carpenter who appears to be wearing a box-like paper hat once worn by carpenters but later by operator of newspaper printing presses. Additionally the drawing in Through the Looking Glass of Alice in the railway carriage shows the gentleman opposite wearing a paper suit and with another type of paper hat.

Fisher gives instructions for folding some of the Carroll models he has identified and concludes the 'fishing boat' of Carroll's was what we know as the Chinese junk. So far so good, but Fisher can't resist including on Page 204 a 2-piece fold of a suit which he justifies by saying that it is an old fold which would have been familiar to Carroll. No evidence for this statement exists in the book.

Our total list of models where there is evidence that Carroll was familiar (bearing in mind he approved every one of Tenniel's drawings) is as follows:

Paper Pistol
Fishing Boat (probably Chinese Junk)
Conical Hat
Box-type Hat

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14. Additional Notes
15. 1.0 CHINA AND THE CHINESE JUNK OR TREASURE SHIP

Eric Kenneway in a letter, 18th July, 1972, points out that Yoshizawa and Takahama both assert that the Chinese Junk or Treasure Ship is a popular Japanese model. The fact that the ship is of a Chinese type is not self evidence that the fold is a Chinese invention. The ships which did bring treasure to Japan were Chinese, and such ships, as a motif in various folk crafts, are a popular symbol of good fortune to the Japanese.

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16. 1.1 Origami AND SHINTO

In a letter, 18th July, 1972, Eric Kenneway says there is a much more significant link between Origami and Shinto than with Zen. Folded paper "gohei" play a central role in Shinto and signify the presence, or the possibility of the presence, of the Shinto divinity. The paper "gohei" is the material thing which the divinity inhabits when it visits the temple. Noshi, wrapper and 'butterflies' are all Shinto-based with purifying functions.

The best reference is 'Shinto' by Jean Herbert, pp. 116 - 117.

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17. 1.2 NOSHI

Atsuchi Miyashita (28), quotes a reference to a form of Noshi in a book by Sadatake Ise called Tsutsumi no Ki written in 1764 giving 13 tsutsumi (wrappers) passed down in his family. In 1801, Hokyu Ogawa's instruction book called Toryu Orikatachi Taizen was published containing 130 items.

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18. 1.3 KNOTTING OF LETTERS

In the Pillow Book of Sei Shonagon (29) dated about 1000 A.D. reference is made to the twisting or knotting of letters, page 40.

"13 Depressing Things but in his hand he carries not a reply, but one's own letter, still twisted or knotted "

In the Appendix, page 280, the following notes appear. " the two main types of formal letters were 'knotted' and 'twisted.' Both were folded length wise into a
narrow strip; but, whereas the knotted kind was knotted in the middle or at one end, sometimes with a sprig of blossoms stuck into the knot, the twisted kind was twisted at both ends and tended to be narrower." This does appear to be a somewhat formalised type of folding which may be a distant cousin of Noshi.

19. 1.4 TERU-TERU-BOZU AND NOSHI

Thelma Randlett in a letter, August, 1972, refers to Teru-Teru Bozu or Sunshine doll made by Japanese boys and girls to pray for rain. The doll is made from a paper ball and a folded sheet to make the body. The custom originated in Kyoto by ladies of aristocratic circles and is mentioned in a diary (30) of the 10th century.

In the first book published in Japan in 1068, with illustrations by the wooden block printing process (31) reference is made to Noshi.

20. 1.5 'TROUBLE-WIT'

In an 1897 article (36), the method of construction and manipulation of 'Trouble-Wit' is described. Mr. David Devant of the Egyptian Hall held a paper folding seance to the magazine's artist. On page 274 it states that paper folding is not new and continues:

"A century or so ago the pastime was known as 'Trouble-Wit', and much earlier even than this we hear of a French priest - Pe're Mathieu introducing the pastime into France."

If we could confirm this reference it would give us a date earlier than any other we know for European paper folding (excluding perhaps Spain).

21. 1.6 SHELLEY

In the book by Hogg (37) we read:

"He had not yet learned that art, from which he afterwards derived so much pleasure - the construction of paper boats"

The account is then given of Shelley's obsession with twisting 'morsels' of paper into likenesses of boats, to sail on any pond or even puddles'. 
We then learn:

"So long as his paper lasted, he remained riveted to the spot, fascinated by this peculiar amusement; all waste paper was rapidly consumed, then the cover of letters, next letters of little value .."

We learn on one occasion he even used a 50 pound bank-post bill.

Once again as with Lewis Carroll it is difficult to understand Kallops (4) reference to Shelley as an ardent paper folder - the folding or twisting seems incidental to the passion for sailing paper boats.

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22. 1.7 David Lister

has continued research into European personalities and paper folding and has given me the following information (derived from Gershon Legman).

The Chinese Junk was described in Victor Hugo's "The Man Who Laughs" (1869) in one of the last chapters, comparing it to the Dutch getaway ship of the hero.

In Paper Magic (5), David has also noted this reference to Samuel Pepys. In his diary he is quoted as saying:

"This day we received a basket from my sister Mary made by her of paper"

Also Hans Anderson in his "Little Tin Soldier" lets his hero voyage in a paper boat.

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23. 1.8 Vicente Palacios

who has made a deep study of the origins of Spanish paper folding has been kind enough to give me reference (38).

This little book of 600 pages makes reference to the paper bird, table, cart box, mirror and ships etc. without any comment on Japanese Origami. Palacios believes that paper folding had a European origin, localised in Spain. This is not, however, the earliest reference that Palacios has traced so far. In a magazine article (39) he quotes references to paper folding in 1757 which would pre-date several of the Japanese Classic references to Origami.

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24. 1.9 An important article by Miyashita (40)
The author considers that what we call Origami today developed from primary school education of the Meiji period and after into creative Origami. Since 1961 an item on Origami has been included in Webster's Dictionary. Origami as we now know it, used to be called Orikatachi (fold-shapes) or Taramikani (fold-paper) in former times.

Closely associated with Origami is the art of Noshi-Zutsumi (gift folding and/or wrapping).

Tsutsumi-no Ki by Sadatake Ise 1764 gave details of thirteen tsutsumi passed down to him. After this many methods of folding tsutsumi became fashionable. In 1801 Hokyu Ogani’s book, Toryu Orikatachi Taizen (Encyclopaedia of Contemporary Origami) was published and contained 130 items.

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25. 1.10 The book "How to fold 1000 Cranes"

published in 1797 (see reference 11 and 13) has been the subject of two further identifications. A Photostat copy of this book has been donated by Bill Warner and the West Coast (U.S.A.) Origami Group to the B.O.S. Library.

Kasahara in his Origami 3 (ref. 41) gives folding details for most of the '1000 Crane' plates and reproduces the original drawings.

In Kasahara's Origami 5 (41) more details and illustrations from Kan-no-Mado are given, see other references.

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26. 1.11 Marlene

refers to a book by Irmgard Kneissler entitled "Das Origami-Buch", in which the history of Origami is outlined as usual - but there are one or two points of interest:

In 1806 educator Chr.. Goth.. Salzman wrote in his Ameisenbuchlein:

"Should you meet a person who possesses the skill to produce a variety of figures by folding paper, don't consider this to be too trifling, try to learn it"

It is concluded that Salzman did not know of the Japanese art of Origami when he wrote this, otherwise he would have referred to it.

Reference is also made to the literary masterwork, "The History of the Prince Genji" by a court lady, Murasaki Shikibi about the year 1000. An intriguing
"Nyosans answer was given on thin Karmesin Red paper and the extra ordinary ingenious and elegant manner in which it was folded caused Prince Genji's heart to beat faster"

27. 1.12 CHINESE PAPER FOLDING.

In the letter Shen refers to the great Chinese poet Tu Fu of the ancient T'ang Dynasty. He says that in Science and Civilisation in China, vol. 3 (on mathematics) p112, it is claimed that Tu Fu mentions paper folding. However in a letter to Shen, Dr. Needham the author, expressed grave doubts and said that he had been misled by a translation by G.Vacca in his paper "Della Piegatura della Carta applicatta alla Geometria" in Periodico di Matematiche 1930 (ser. 4), 10, 43. There was a mistranslation of a line in Tu Fu which reads "my old wife is drawing out a chessboard on paper" this was mistaken as folding.

Shen then followed the matter up with Dr. T.H.Taien of Chicago University, an expert on the history of paper in China and he could find no reference to paper folding in Tu Fu. There is one line which reads "cutting paper to call my spirit". Dr. Tsien refered to the paper flowers found by Stein in Tunhuang as possibly an example of paper folding. I read the orginal report and it is quite clear that the flowers are paper cuts not folds.

28. 1.13 LEONARDO da VINCI

In the BOS newsletter No. 55 Roberto Morassi writes--- "I've spent a couple of hours in the National Library looking into the fascinating world of Leonardo's manuscripts. I've checked all of the plates reported in the introduction of Art of Origami - most of them are problems of plane and solid geometry; relationship between square and hexagon and so on. Only one or two plates, however, show drawings which in my opinion could be reminiscent of paper-folding. But it's quite difficult to judge whether these (which are apparently unrelated to the text) are really representations of creased sheets, or simple exercises of plane geometry, or what else." Perhaps the people who are convinced that Leonardo was an enthusiastic paper folder will tell us why they think that!

29. 1.14 CHINESE JUNK IN THE NETHERLANDS.
Elsje van de Ploeg has found an illustration of the Chinese Junk dated about 1806 (ref. 43) The junk is illustrated in the picture book "Hanenpoot" which Bilderdijk wrote and illustrated for his young son Julius Willem. The book appeared in print in 1977 through the good services of Dr. J.Bosch. In one of the carefully drawn illustrations there is a caption which reads: "Hanenpoot strong and proud sail in a paper boat", the drawing itself shows a folded model which later became known as the "Chinese Junk".

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30. 1.15 PAPER BOATS

Vincente Palacios made a remarkable discovery of what appears to be a drawing of a paper boat dated 1490. John Holywood (also known as Johannes de Sacrobusto) was an English mathematician and astronomer living in the 13th century. He wrote a book called "Tactatus de Spaera Mundi" which appeared in many editions between 1472 and 1647. In an edition published in Venice in 1490 there is a diagram illustrating a solar eclipse, at the centre of which is a diagram of the Earth partly sea and partly land. On the sea are two ships which look remarkably like the traditional paper boats.

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31. 1.15 MAP FOLDING

Eric Kenneway (ref.44) refers to the oldest folded map in existence which is believed to date from Egyptian times and can be seen in the City museum Milan. It is drawn on Papyrus and has a grid of cracks and creases across it which seem to indicate that it was orginally folded that way.

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32. 1.17 WATERBOMB

Eric Kenneway (ref.45) refers to the play by Webster, The Duchess of Malfi first performed in 1614. It contains the lines '.....those paper prisons boys use to keep flies in.....'. Eric felt that this must refer to the waterbomb used as a fly trap. If the original text contained those words then this would be the first known reference to paper folding in the English language. I have been in touch with the University of East Anglia and have received confirmation that the text Eric quotes is indeed in the play. Z.Chiang (ref. 46) refers to being taught as a child the waterbomb form to put flies in. In June 1994 Thoki Yen told me that in Denmark he had met an Egyptian magician (stage name Prince) who was taught as a child in Egypt, the waterbomb as a container in which to put flies. Thoki had checked that it was
indeed the waterbomb that was used. Subsequently 'Prince' said they used a little tube of paper to look at the fly and referred to it as a camera. Erci Kenneway points out (ref.44) that the waterbomb is not only used as a play- toy by filling it with water and throwing it or dropping it, but it is also known in Japan as a play balloon and in the USA as a peep show (a picture is drawn before the final folding).

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16. D. Leandro Fernandez de Moratin, Oct. 1793, quoted by Palacios
20. Education of Head and Hand, Gabriel Hamberger, Flanagan, 1891.
22. Friedrich Froebel, paper-folding references, Enslin 1874.

Note: References 18 - 22 inclusive quoted from G. Legman's Bibliography of paper-folding

27. Shinto - by Jean Herbert, pp. 116 - 117.
31. Ise Monogatari published 1068 (reference Thelma Randlett U.S.A.

(This is actually by Thomas Jefferson Hogg a friend of Shelley and was originally published in 1858).


42. Das Origami Buch by Marlene Stroud Newsletter of the B.O.S., No. 49, December 1974.


45. A B C of Origami by Eric Kenneway BOS Booklet no.47, 1994

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26. 1.11 Marlene
27. 1.12 CHINESE PAPER FOLDING
28. 1.13 LEONARDO da VINCI
29. 1.14 CHINESE JUNK IN THE NETHERLANDS
30. 1.15 PAPER BOATS
31. 1.15 MAP FOLDING
32. 1.17 WATERBOMB
33. REFERENCES

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