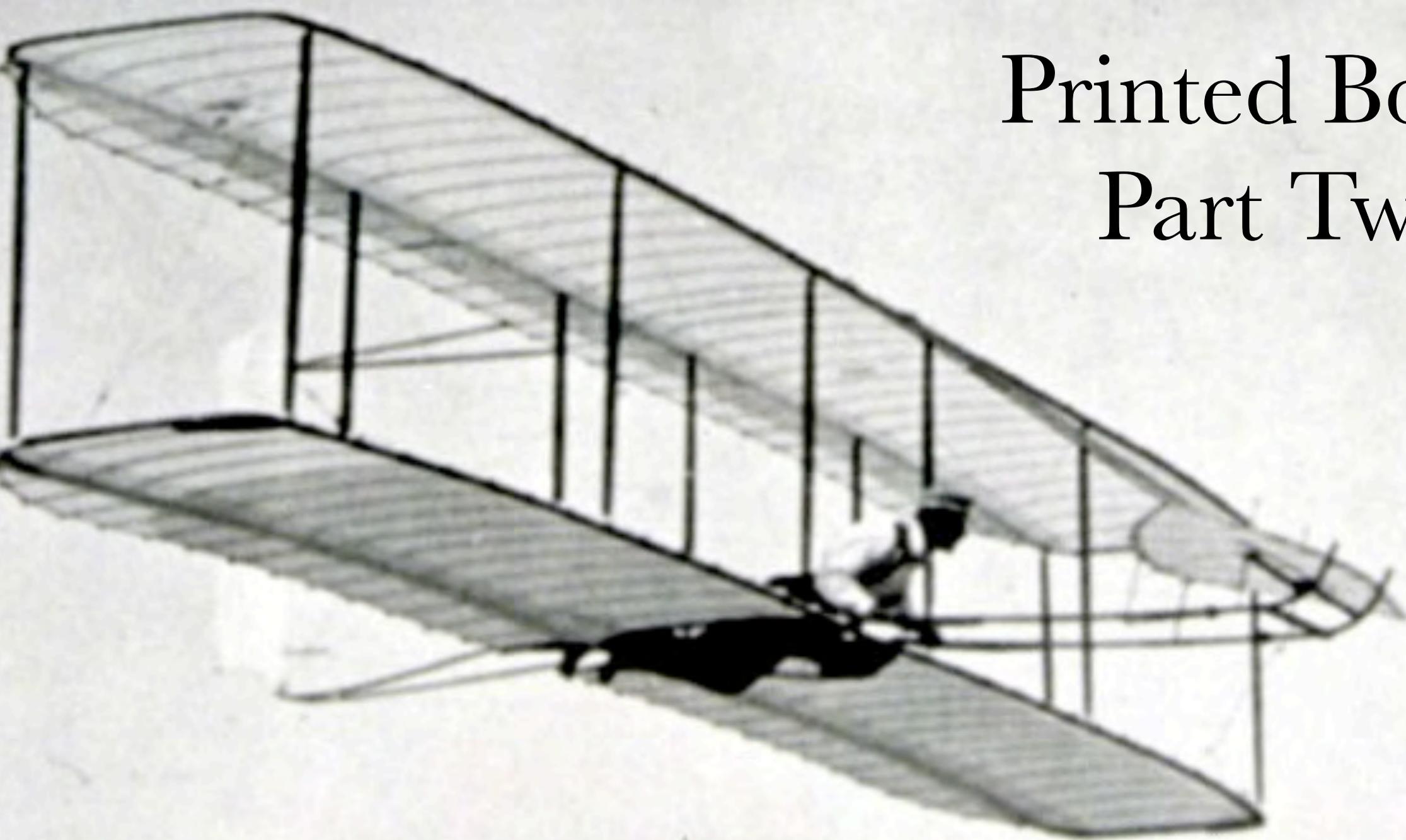


Printed Books

Part Two



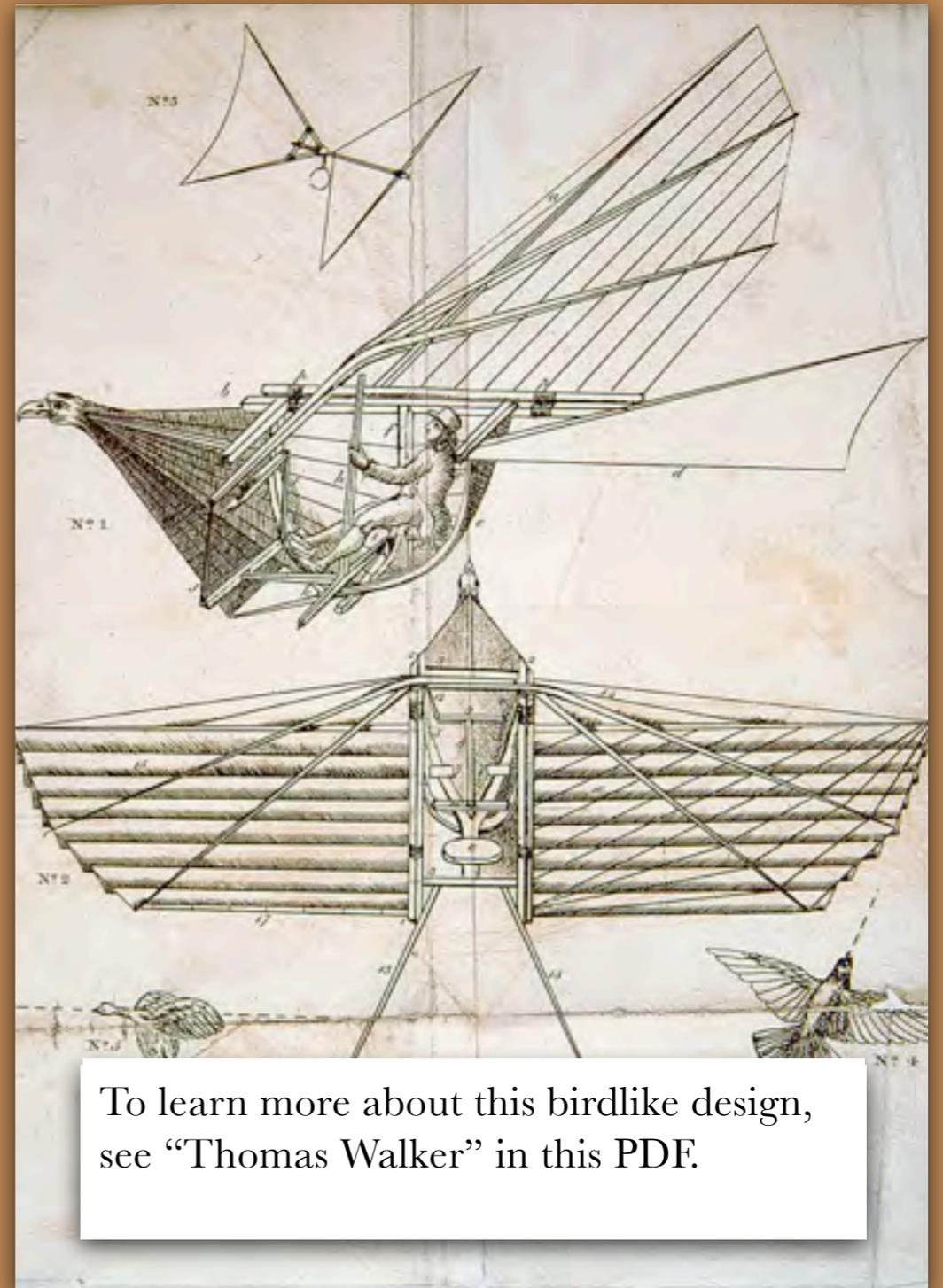
The Genesis of Flight

The Aeronautical History Collection of Colonel Richard Gimbel

At the United States Air Force Academy

Printed Books 1489 - 1850 Part 2

This is the second of two parts covering Printed Books, 1489 - 1850. The introduction to both parts appears at the beginning of Printed Books: 1489 - 1850, Part 1.





Brunt, Samuel [pseud.]

A voyage to Cacklogallinia: with a description of the religion, policy, customs and manners, of that country. By Captain Samuel Brunt. London, J. Watson, 1727.

167 p. front. 18 cm.

"A journey to the moon," pp. 122-167.

1. Voyages, Imaginary. I. Title.

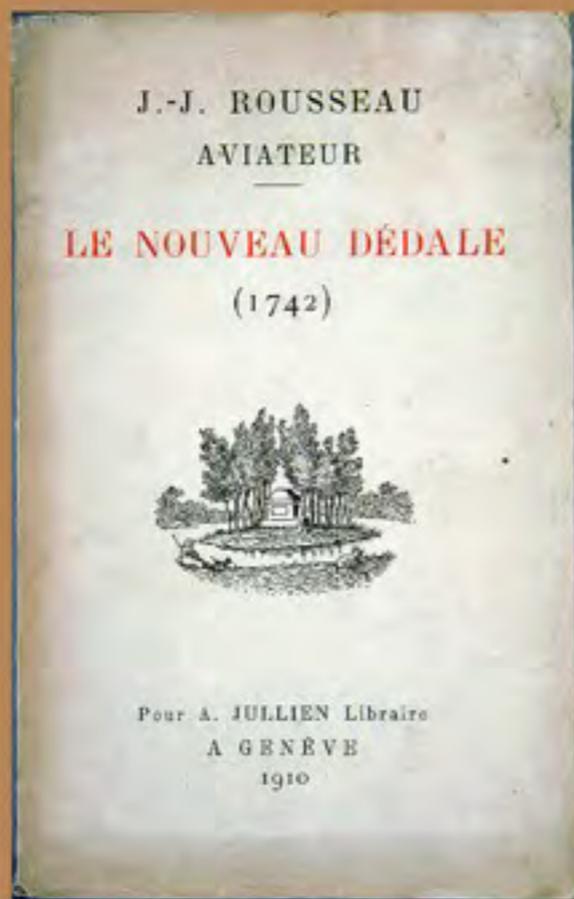
PR3328.B38 1727

Other copies and editions in the Gimbel collection:

PR3328.B38 1751: *Captain Samuel Brunts Reise...aus dem Englischen übersetzt*, Leipzig, 1751.

A lively Robinsonade, this satire on contemporary mercantilism is indebted in many respects to the last book of Swift's *Gulliver's Travels*, which had appeared the previous year. "Captain Brunt" (who remains unidentified) finds a country inhabited not by talking horses but by talking birds, whose language he learns. His description of their society bears directly on that of England. The birds conceive a project of traveling to the moon to discover gold in its mountains. Brunt demurs, using arguments from previous writers, including, in particular, those of Wilkins (see above, Wilkins, *A discourse*, 1640), which focused on the difficulty of getting to the moon. He loses the argument and reluctantly agrees to head the expedition. In this, Brunt's story differs from many of its predecessors, whose heroes are only too keen to get to the moon. Brunt flies, but only in the sense that the birds bear him along with them in a specially constructed aerial carriage. The journey having been

made, the moon is found to be an idyllic place where “chrysal Rivulets” seemed “so many Mirrors reflecting the various Beauties of those odoriferous flowers which adorn'd their Banks” (p.135). Contact is established with the idealistic moon-dwellers, who are of “neither a corporeal nor an aerial Substance, but... between both” (p.142). Brunt also finds that the moon is a place of dreams, partly inhabited by the souls of sleeping humans acting out their fantasies. These passages return the reader to some of the earliest myths about the relationship of moon and earth. Thereafter the satire continues for a time until Brunt is flown back to Jamaica. In telling his story, Brunt quotes many scientific facts and theories, some taken directly from Godwin, Wilkins, and Cyrano; others are more up to date.



Rousseau, Jean-Jacques, 1712-1778

Le nouveau Dédale (1742). A Genève, A. Jullien, 1910.

25 p., 1 l. 23 cm.

At head of title: J.-J. Rousseau, aviateur.

With reproduction of original t.-p.: *Le nouveau Dédale; ouvrage inédit de J.-J. Rousseau, et copié sur son manuscrit original daté de l'année 1742*. A Paris, Chez M^{me}. Masson, [1801].

Introduction signed: Pierre-Paul Plan.

"Extrait du Mercure de France 16-x-1910 et tiré à cent soixante-quinze exemplaires."

With this is bound a copy of the original edition: A Paris, Chez M^{me}. Masson...[1801].

1. Aeronautics. I. Plan, Pierre-Paul, ed. II. Title.

TLB154.R86 1742

Gamble 100

Other copies and editions in the Gimbel collection:

TLB154.R86a 1742: facsimile of 1st ed. (1801), Pasadena, [1950].

In 1742 a highly eccentric Frenchman called Jean-François Boyvin de Bonnetot, who falsely styled himself Marquis de Bacqueville, announced that he would fly across the Seine from his house on the quai des Théatins (now the quai Voltaire) and land in the Tuileries. At that date he was about 60 years old. A crowd gathered to watch as Bacqueville, with wings attached to his arms and legs, threw himself from a

window. Exaggerated accounts say that he flew for "100 fathoms" (600 feet) before falling into a laundry boat where, as is so often related in accounts of such attempts, he broke his thigh. He nevertheless survived his ordeal and did not die until 1760—and then only in a fire that burned down his house. Rousseau, who had been among the crowd of onlookers at the attempt to cross the Seine, was prompted by the event to write a speculative essay on the possibility of human flight, which he found an intriguing puzzle. (He plays on the meaning of *dédale* as a common noun: maze, or labyrinth.) Taking up the idea of aerial navigation, he points out that a flying machine will not sail on the surface of the air, as does a ship on water, but will be immersed in it. He focuses also on the difficulty of maintaining control over the altitude of any machine dependent on lighter-than-air principles.



[Cambridge, Richard Owen] 1717-1802

The Scribleriad: an heroic poem. In six books...
London, Printed for R. Dodsley . . . and sold
by M. Cooper. . . , 1751.

6 pt. in 1 v. front., 6 pl. 26 cm.

Title vignette.

Each part has separate t.-p. and paging.

Preface signed.

I. Title.

PR3339.C125

[Gamble 45]

Other copies and editions in the Gimbel collection:
PR3339.C125L: *An aerial race between a Briton and a
German...* [extracts, illus.], London, 1918.

Cambridge's *Scribleriad* is written in imitation of Pope's *Dunciad*. Among its several mock epic events is a race between a German and a Briton, both equipped with artificial wings. The illustration (frequently reproduced) shows the German using modern technology—the flapping wings of Besnier, but without the harness that enabled Besnier to use leg power. Although, like Besnier, the German is essentially naked, he wears a loincloth suitable for a public ceremonial occasion before an elegantly dressed audience. He is a fine, athletic, young man. His opponent is fully naked and more rugged, to suggest more primitive origins. The Briton's wings, damaged because, like Icarus, he has flown too high, do not depend, as do those of the German, on up-to-date technology but resemble those described in very

early accounts of manned flight. Cambridge makes the comparison explicit: the Briton falls because of his excessive ambition. Having flown too high, he finds that the air will no longer support his weight. He plunges to the earth, catching the German's foot and treacherously carrying him down as he passes. To describe the Briton's fall, Cambridge translates Ovid:

His naked arms in yielding air he shook:
His naked arms no more support his weight,
But fail him sinking from his airy height.
(IV.148-149)

As compensation for his ill fortune, the German is ironically rewarded with a statue of Icarus.



[Paltock, Robert] 1697-1767

The life and adventures of Peter Wilkins, a Cornish man. . . Taken from his own mouth, in his passage to England, from off Cape Horn in America, in the

ship Hector . . . Illustrated with several cuts . . . presenting the . . . wings of the Glums and Gawrys . . . By R.S., a passenger in the Hector.. London, Printed for J. Robinson and R. Dodsley, 1751.

2 v. illus. 1 cm.

First ed.

I. Title. II. Title: Peter Wilkins.

PR3615.P5p 1751

[Gamble 93]

Other copies and editions in the Gimbel collection:
 PR3615.P5p 1783: another ed., London, 1783;
 PR3615.P5p 1783a: another copy of the previous item;
 PR3615.P5p 1784: another ed., Berwick, 1784, Gamble 93;
 PR3615.P5p 1828: first American ed., Boston, 1828, R-P 13;
 PR3615.P5p 1828a: "improved" ed. (i.e., bowdlerized and abridged), Boston, 1828;
 PR3615.P5p 1830: reprint of the previous item, Boston, 1830;
 PR3615.P5p 1832: another abridged ed., Boston, 1832;
 PR3615.P5p 1833: abridgement of 1828 with col. ill., Boston, 1833;
 PR3615.P5p 1839: reprint of an ed. originally prepared for children by Robert Dodsley, London, 1839;
 PR3615.P5p 1840: reprint of the abridged ed. of 1828, Boston, 1835 [i.e., 1840];
 PR3615.P5p 1843: another abridged ed.,

Hartford, 1843; PR3615.P5p 1847: abridged ed., Boston, 1847; PR3615.P5p 1848: abridged ed., Philadelphia 1848; PR3615.P5p 1854: abridged ed., Philadelphia, 1854; PR3615.P5p 1856: dramatized version in two acts, 22 p., 2 copies, New York, 1856?, R-P 34; PR3615.P5p 1884: reprint, with t.-p. of 1st ed., London, 1884; PR3615.P5p 1915: modern ed. (Everyman), London and New York, 1915; PR3615.P5L5 1925: modern ed., London, 1925; PR3615.P5pa: abridgement (39, [1] p.) and satire, London, [1802]; PR3615.P5pf: *Les hommes volants*. . ., French trans., illus., Paris, 1763, Brockett 12901.

Beginning as another Robinsonade, Paltock's book also adapts material from Swift's *Gulliver's Travels*. Remaining extremely popular throughout the eighteenth and nineteenth centuries, it was translated into several languages. Peter Wilkins finds himself in a strange subterranean world inhabited by Glums and Gawries—male and female creatures who are almost exactly like human beings except that they can fly by the use of a ribbed membrane, which grows with them as they mature and which they can detach when they desire. In vol. 1, chap. 20, Paltock gives a description of the wings and their structure so detailed as to suggest that he might have envisaged someone's trying to make a pair. Peter Wilkins lives

among these people for many years and marries one of the Gawries, producing seven children. The popularity of Paltock's book owes much to the deep-seated wish, felt by many people, to fly by natural means rather than by the use of a machine. The book helped to encourage experiments with ornithopters.



Galien, Joseph, 1699?-1762

L'art de naviger dans les airs. Amusement physique et geometrique, précédé d'un Memoire sur la nature & la formation de la grêle, dont il est une conséquence ultérieure. Par le R.P. Jos. Galien... 2. éd., rev. & cor. A. Avignon, Chez Antoine Ignace Fez,

2 p., 87, [1]p. 14.5 cm.

First edition published anonymously, 1755, under title: *Mémoire touchant la nature et la formation de la grêle et des autres météores qui y ont rapport, avec une conséquence ultérieure de la possibilité de naviger dans l'air à la hauteur de la région de la grêle.*

Bookplate of Albert Tissandier.

1. Aeronautics. 2. Hail. I. Title.

TLB397.G15

Although suggestions for airships or balloons filled with "ether," or air of superfine nature found at high altitude, were made as early as the Middle Ages, Father Galien's proposed airship is probably the most grandiose ever imagined. As a spin-off from a serious discussion of the formation of hail—a recurrent problem for agriculture in the south of France—Galien describes his idea for a flying machine filled with light air, the volume of which would be the equivalent of a cube on a side of 6,000 feet. Longer and wider than the city of Avignon, the ship would be capable of carrying 4 million people, plus their baggage, together with a cargo of 58 million hundred-weight. He speculates that such a ship, an order of magnitude larger than the Ark, could provide refuge from another flood or perhaps from a new danger: a world engulfed in pestilential air. The

crew would manage the ship from little skiffs suspended from the sides with ropes and pulleys. Although based on sober calculations, Galien's airship is little more than a semiscientific amusement. In concept it is not, however, even semitechnological. Galien gives no thought to the engineering problems that would confront anyone trying to build such a structure from the materials he suggests: skins, cables, cords, and strong double cloth waxed or treated with pitch. He says nothing at all about the means of propulsion, and he does not suggest how his ship might be used to alleviate the thunderstorms with which he began.



Morghen, Filippo, b. 1730?

Raccolta delle cose più notabili vedute dal cavaliere Wild Scull, e dal Sig.^r de la Hire nel lor famoso viaggio dalla terra alla luna che sono spiegate nella storia di detto viaggio descritta dall'istesso

Wild Scull nell'ordine seguente, e disegnate dal detto Sig.^r de la Hire. Esposte in nove rami incisi appresso Filippo Morghen Fiorentino. Numero 1^o. Rappresenta un selvaggio montato sopra un serpente alato che combatte con una fiera somigliante ad un porco spino. N. 2^o. Vna nuonva macchina per fendere da capo a coda le fiere. N. 3^o. Le carrozze che si usano nella luna e che vanno alla vela. N. 4^o. Maniera di navigare a forza di mantici praticata in quel globo. N. 5^o. Maniera di trasportare le merci sopra zattere tirate da un mantice. N. 6^o. Zucca che serve per barca da pescare. N. 7^o. Zucche che servono d'abitazioni per garantirsi dalle fiere. N. 8^o. Barca che ha per vela le ali d'un grandissimo uccello. N. 9^o. Abitazione dentro, l'āqua, e nuova maniera di chiamare l'oche a suon di tamburo. Dedicata a.s.e. il signor Guglielmo Amilton, inviato di S.M.B.ca alla corte di Napoli. [Naples? ca. 1760].

1 p., 9 pl. 40 x 54 cm.

Engraved t.-p. showing the Cavalier Wild Scull and Signor de la Hire descending from their flying machine on the moon and introducing themselves to its inhabitants.

Plates in first state.

Another issue has title: *Raccolta delle cose più notabili vedute da Giov. Wilkins erudito vescovo inglese nel suo famoso*

viaggio dalla tera alla luna con i disegni di animali e machine a noi incognite e dal medesimo descritte nella sua celebre Istoria, esposte in nove rami incisi appresso Filippo Morghen

Fiorentino. N. 1º. Rappresenta un selvaggio montato sopra un serpente alato che combatte con una fiera somigliante ad un porco spino... N.9º. Abitazione dentro l'acqua, e nuova maniera di chiamar l'ocche a suon di tamburo. Dedicata a s.e. il signor Guglielmo Amilton, inviato di S.M.C.rea alla corte di Napoli. 1764.

The plates have no connection with the text of John Wilkins' *Discovery of a world in the moone* (London, 1638) to which the title apparently refers.

1. Voyages, Imaginary. I. Wilkins, John, bp. of Chester, 1614-1672. The Discovery of a world in the moone.

TLE1041.M86

The title announces that this is a collection of "the most noteworthy things seen by the Cavalier Wild Scull and Signor de la Hire during their famous voyage from the earth to the moon." A set of engravings without text, it is prompted in part by Bishop Wilkins. While the name "Wild Scull" suggests an imaginary adventurer, "Signor de la Hire" refers to a well-known scientist, Phillippe de la Hire (1683-1768), who did not believe that the moon was

habitable. As is indicated in the catalog entry, de la Hire's name was replaced in later editions by that of the more imaginative Wilkins. The illustration on the title page shows the two adventurers shortly after their arrival on the moon, respectfully greeting the inhabitants. Their flying machine is like a low wooden house or shed equipped with a pair of wings. It may owe something of its conception to the legend of the transport of the Virgin's house to Loreto. There is no indication as to how the wings were operated. Other engravings in the set show details of life in a charming, zany, lunar world like something out of Lewis Carroll or, even, in some cases, Roald Dahl.



Paucton, Alexis Jean-Pierre, 1732-1798

Théorie de la vis d'Archimède, de laquelle on déduit celle des moulins conus d'une nouvelle maniere. On y joint la construction d'un nouveau lock ou sillometre,

& celle d'une sorte de rames très-commodes, & c. De plus, une dissertation sur la résistance des bois, & les tables nécessaires, dressées d'après les expériences de MM. de l'Académie des sciences. Par M. Paucton. . . A Paris, Chez J.H. Butard, 1768.

xx, 6 p. l., 214, [10] p. 7 fold. pl.18 cm.
1. Archimedean screw.
TLB397.P32

At the end of this dissertation on the properties and uses of the Archimedean screw, Paucton suggests its application to the building of a helicopter (pp. 210-214). Although he protects himself from ridicule by alleging that he is writing only for amusement, it is clear that he has an entirely serious, practical idea in mind. Following much calculation based on the primitive hydro- and aerodynamic theories of his day, he states that since a man can support his own weight on his arms, he should be able to lift himself into the air by turning rotor blades fitted to a suitable chair and operated by a handle, everything being built lightly and with care to minimize friction. As the movement is simple, friction would in any case be low. The rotor blades would be sectors of a full circle. For directional control a second, horizontal rotor should be added. When the aeronaut needed to rest, he

could move a lever that would turn the blades of the upper rotor, reducing their pitch to zero and thus form a closed canopy. With this parachute above him, he would sink gently to the ground. Pauc-ton's calculations indicated that the necessary total surface of the upper rotor blades would be 144 square feet. Pauc-ton's book, which contains many detailed arithmetical tables but no drawings, was read by many later theorists of aviation. Illustrated variants of his design turn up frequently, some even in patents of the nineteenth century. A similar suggestion by Robert B. Taylor (1842) is discussed in Charles H. Gibbs-Smith, *Sir George Cayley's Aeronautics, 1796-1855* (London: HMSO, 1962), pp. 102-108.



Zamagna, Bernardo, 1735-1820

Bernardi Zamagnae S.J. Navis aerea et Elegiarum monobiblos. Excudebat Romae Paullus Giunchius, 1768.

xvj, 151, [1] p. 1 illus. 18.5 cm.

Engraved title vignette: tail-pieces.

"Navis aerea," a poem written in honor of F. Lana de Terzi and his airship project,

describes an imaginary trip by airship to various parts of the world.

"Idyllium I-IV" p. 131-151

1. Lana de Terzi, Francesco, 1631-1687. 2. Voyages, Imaginary. 3. Aeronautics Poetry. I. Title: Navis aerea. II. Title: Elegiarum monobiblos.

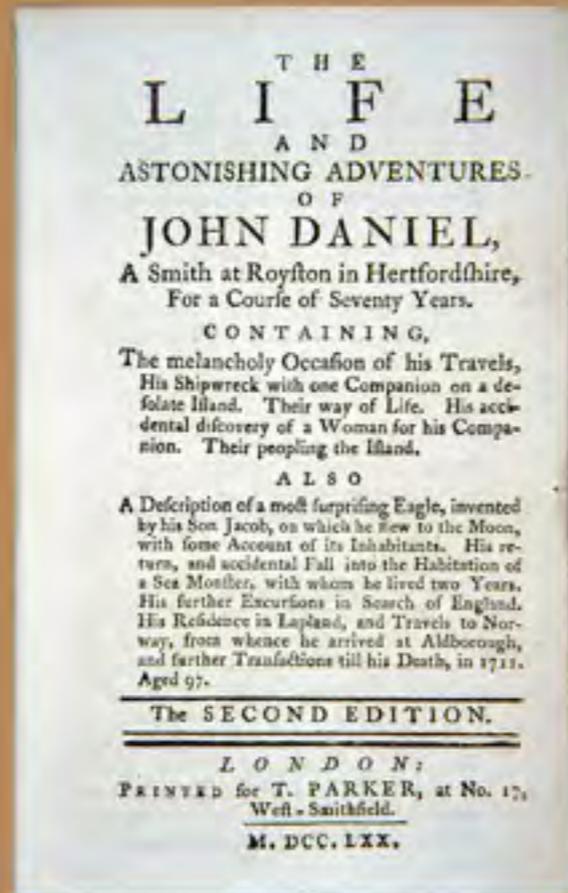
TLE1041.Z2

[Gamble 35]

Thoroughly versed in classical literature, the Jesuit father Bernardo Zamagna celebrated the invention of his countryman and fellow priest Francesco Lana de Terzi by writing an epic poem in Latin hexameters describing an imaginary voyage around the world. In the second canto, he describes the takeoff and the airship's 24-hour circumnavigation of the globe.

Although far from being a great circle, Zamagna's imaginary route is generally westward. Written in conscious imitation of Virgil, the verses are accomplished, if far from truly Virgilian in tone and movement. Just as Virgil—and Lucretius before him—enjoyed making poetry out of technicalities, Zamagna writes at length about the structure of the

flying ship and about the scientific theories that lay behind it. He is largely successful in his project of combining modern science and technology with the classical arts and in bringing the ancient epic journey not only into the modern world but into what, for him, was the future.



Daniel, John, of Royston [pseud.]

The life and astonishing adventures of John Daniel. . . containing the melancholy occasion of his travels. . . also a description of a most surprising eagle. . . on which he flew to the moon. . . 2nd ed. London: Printed for T. Parker, 1770.

319 p. illus. 17 cm.

Attributed to Ralph Morris

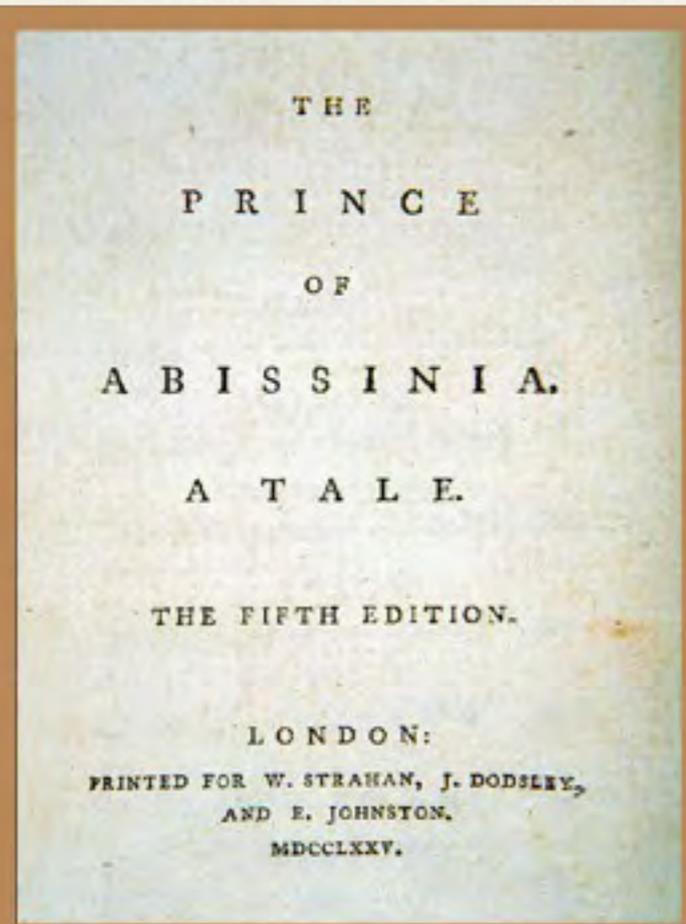
I. Morris, Ralph. II. Title.

TLE1041.D17 1770

Other copies and editions in the Gimbel collection:
TLE1041.D17: reprint of the 1751 ed., London, 1926, Gamble 88; TLE1041.D17 1848: *Flying and no failure! or, Aerial transit accomplished more than a century ago...*, reprint of 1751 ed., Totham, 1848, Gamble 87.

First published in 1751, a rich year for aeronautical literature, this entirely fictional account of a journey to the moon acts as a vehicle for a serious (if impractical) suggestion for a real flying machine, which is illustrated and described in detail. The concept is entirely original for its period. The machine is a flapper of generally rectangular shape operated by the vigorous working of a handle like that of a water pump. Its frame is built mostly of iron "thin, light, and taper," and of "several pieces of wood." A set of carefully designed levers and hinges allows the ribs of the parasol-like structure to be simultaneously bent downward. After the downstroke on the handle is released, the ribs automatically bend back to the horizontal. The propulsive power thus comes from jet action like that of a jellyfish.

Directional control is achieved by variations in the center of gravity, the flier standing on the appropriate side to cant the machine. The total lifting surface is on the order of 500 square feet. The idea for the flying machine was lampooned in 1769, immediately before this reprint, by an anonymous writer who, not having read the original, misunderstood the illustration. His version led many to believe that the machine stayed aloft because air was pumped from above to below.



Johnson, Samuel, 1709-1784

The Prince of Abissinia, a tale. 5th ed. London: Printed for W. Strahan, J. Dodsley, and E. Johnston, 1775.

viii, 304 p. 17cm.

I. Title.

PR3529.A1 1775

Other copies and editions in the Gimbel collection:

PR3529.A1 1803: new ed., London, 1803;

PR3529.A1 1810: new ed., Frederick-Town [Md.],

1810; PR3529.A1 1812: new ed., London, 1812;

PR3529.A1 1819; new ed., illus., London, 1819;

PR3529.A1 1826: new ed., Boston, 1826;

PR3529.A1 1829: new ed., Chiswick, 1829;

PR3529.A1 1831; new ed., Boston, 1831;

PR3529.A1 1844: new ed., Boston, 1844;

PR3529.A1 1850: new ed., Hartford [Conn.], 1850;

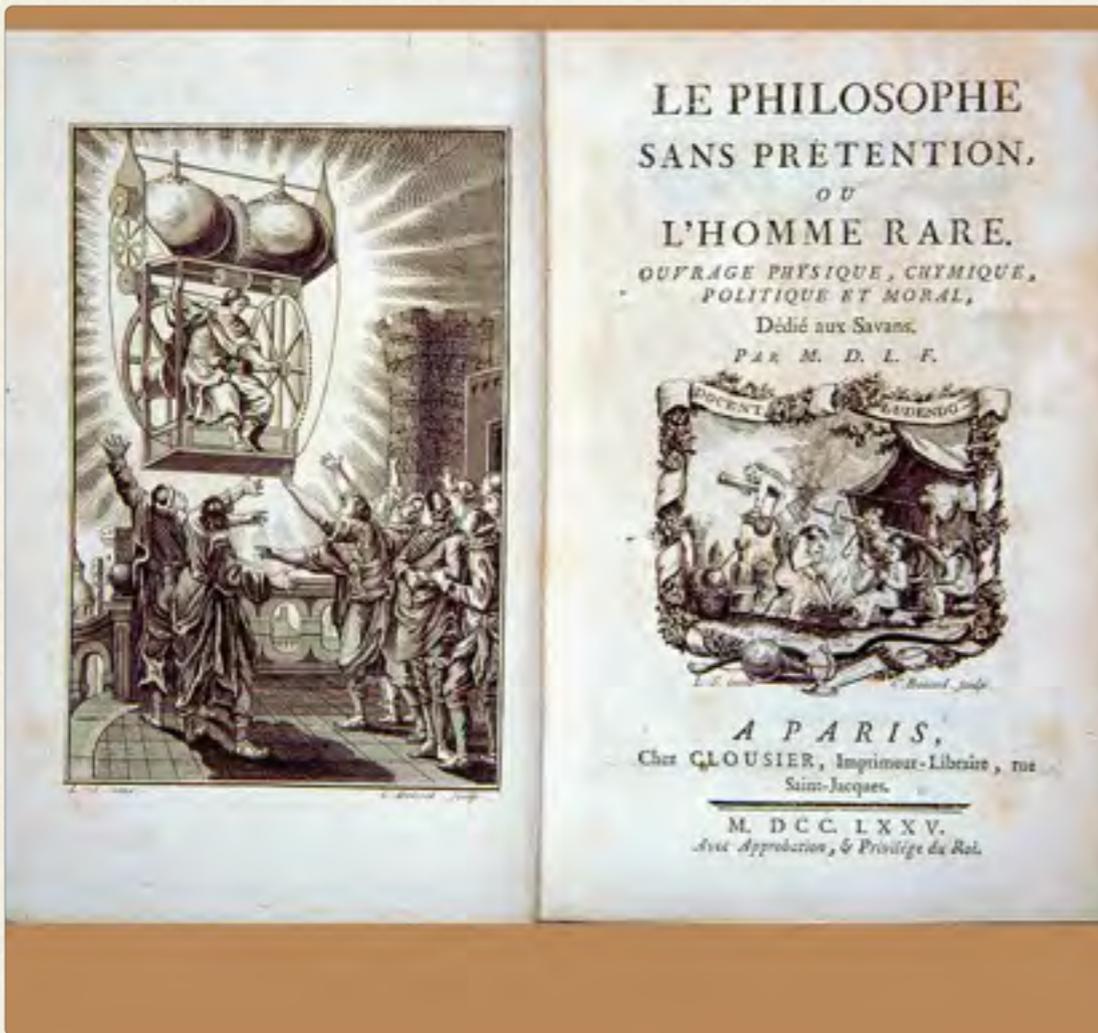
PR3529.A1 1864: new ed., New York, 1864;

PR3529.A1 1875: new ed., Philadelphia, 1875;

PR3529.F8 1832: the English text with a French translation, English and French on facing pages, Paris, 1832.

First published in 1759, this popular tale went through many editions. It is usually referred to as *Rasselas*, the name of the prince of the tale. The sixth chapter consists of a "Dissertation on the Art of Flying," a satirical discussion between the prince and a mechanic who believes he has invented wings for human beings. Rasselas takes a special interest because he wishes to escape from "Happy Valley,"

where life is idyllic but bland, to encounter a more bracing world. Wings will not, however, be of service to him. At the end of the chapter the mechanic "appeared furnished for flight on a little promontory: he waved his pinions a while to gather air, then leaped from his stand, and in an instant dropped into the lake. His wings, which were of no use in the air, sustained him in the water, and the prince drew him to land, half dead with terrour and vexation" (p. 43). Deeply pessimistic about all human endeavor, Johnson was probably responding to the many books about imaginary flight published a few years earlier; he may have read some of the many sarcastic accounts of the flight undertaken in Paris by the Marquis de Bacqueville. The idea that before takeoff a flier might need to "gather air" in the wings was frequently mentioned. By waving the feathers back and forth for a time, the flier would gather air in the interstices. Because air was thought to be naturally "light," this action would give the wings added buoyancy.



**[La Follie, Louis Guillaume de]
1733?-1780**

Le philosophe sans prétention, ou L'homme rare. Ouvrage physique, chymique, politique et moral, dédié aux savans. Par M.D.L.F. A Paris, Chez Clousier, 1775.

349, [1] p. front. 19.5 cm.

Engraved title vignette, frontispiece, and head-piece.

Incomplete: p. 337-338 wanting.

1. Physics—Early works to 1800. 2. Chemistry—

Early works to 1800. I. Title.

Q157.L16

Brockett 4686

This work, another that explores flight in unusual ways, belongs both to science fiction and to the class of imaginary voyages that brings an exotic traveler to us rather than sending a familiar hero to strange lands. The machine shown in the illustration is flown by an inhabitant of the planet Mercury. Written by a practicing chemist, the book explores the possibilities of flight by the use of static electricity. Having expected to see a flying chariot with wings, the narrator is surprised to find a strange and apparently unaerial piece of scientific machinery. Two glass globes each 3 feet in diameter are held on wooden members that are themselves covered with glass plates. Springs between the wooden members allow the globes to turn. The platform at the base is rubbed with camphor and covered with gold leaf. Metal wires surround the whole thing, which thus suggests some kind of primitive dynamo. The spinning globes produce a powerful beam of light

shining in a downward direction. The light causes the machine to rise by reducing the air pressure above it, so that it can be made to travel in any direction at the pilot's discretion. The description of the mechanism and its effects, which occupies only a small part of the book near its beginning, is a piece of technobabble surpassing the propositions of the Projectors in *Gulliver's Travels*, Book III. La Follie's analysis of the relationship of air, fire, and static electricity, presented in a tone of total seriousness, reads like a forerunner of a speech from *Dr. Who*. The account of scientific discussions in the Mercurian academy is a thinly disguised parody of intellectual life in the French Academy and the Royal Society.



**[Restif de la Bretonne, Nicole Edme]
1734-1806**

La Découverte australe par un Homme-volant, ou Le Dédale français; Nouvelle très-philosophique: suivie de la Lettre d'un Singe, & c. . . Imprimé à Leïpsick: Et se trouve à Paris, [1781].

4v. fronts. (v. 1, 2, 3) pl. (1 fold.) 16.5 cm.

Title vignette.

Half-title, prefixed to v.1: *Oeuvres posthumes de N.*

*****. *Oeuvre S. de, La découverte australe, ou Les Antipodes: avec une estampe à chaque Fait principal, 1781.*

Paged continuously throughout the first, second, and part of the third volume (624 p.) where a new pagination begins, continuing through the fourth volume (422 p.)

Illustrated by Binet? Cf. Cober, *Guide de l'amateur de livres à gravures du XVIII^e siècle* (1886), p. 503.

"Ouvrages du même auteur, dont on trouve des exemplaires à Paris, chés la veuve Duchêne..."; 2 p. at end.

Imperfect; plate to follow p. 357 (v. 2) and list of plates and contents (at end of v. 4) are wanting. Book-plate (in v. 1): Ex libris Gaston Tissandier.

I. Voyages, Imaginary. I. Binet, Louis, 1744-*ca.*1800, supposed illus.

II. Title. III. Title: Homme volant.

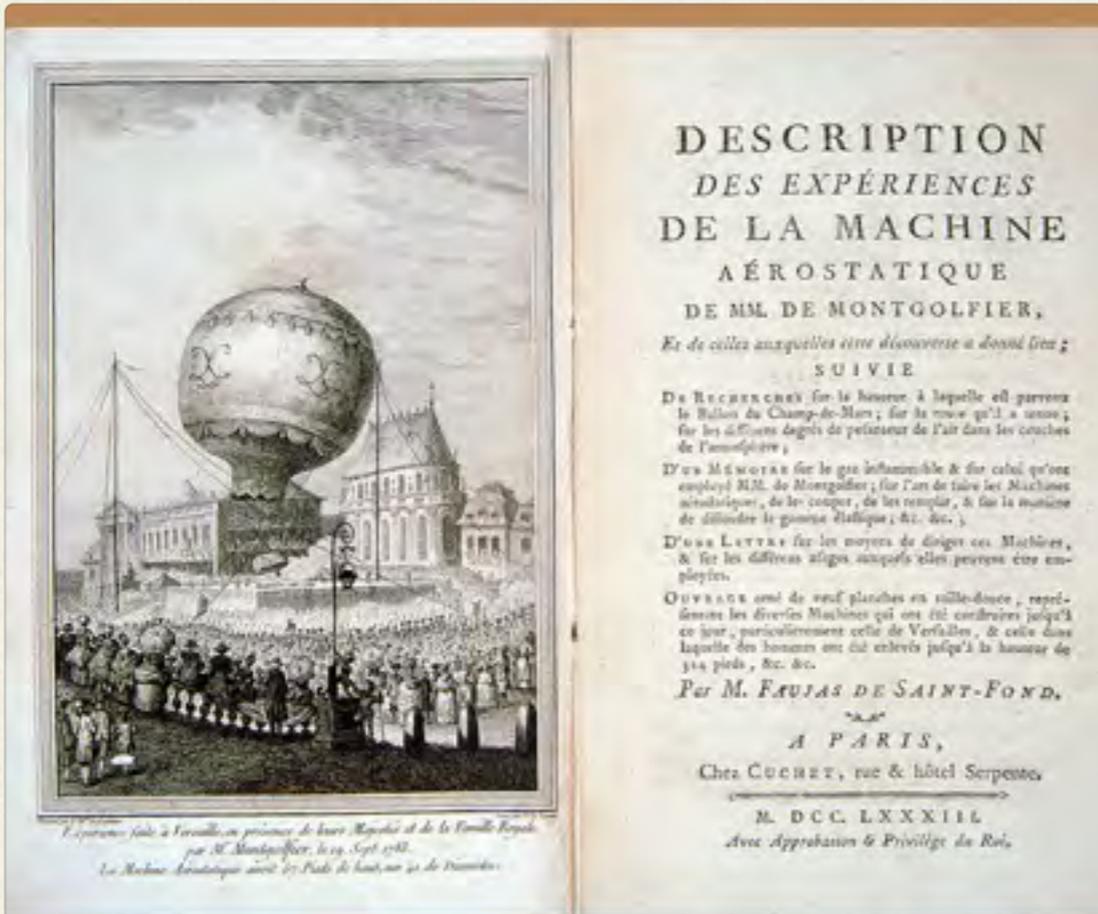
PQ2025.D4

Brockett 10313

Other copies and editions in the Gimbel collection:
PQ2025.D4 1818: *Avventure e viaggi di un uomo volante. Traduzione dal Francese, 2 v., Milano, 1818.*

Restif's long novel brings together two themes often connected in the visual arts: flight and love. The hero longs to pay court to a girl whose social station is too far above his own to permit him to approach her. He decides to carry her off by force to a place inaccessible except by flight. For some years he studies the flying action of every winged creature, the details of which Restif explores in leisurely fashion. Like many aspiring birdmen before him, including Leonardo, the hero makes trials in secret. He feels dizzy during his first successful flight but rapidly accommodates to the experience. When he is satisfied with his equipment, he prepares a small settlement on a mountaintop, sowing seeds for a farm and carrying off the assistants he will need in order to lead a civilized life there: a group of astonished servants and a priest. The basket in the illustration is laden with some of his provisions. Finally he flies away with his beloved, who is content to be with him. There follows a long series of adventures, including scenes in the Antipodes of the half-title. The hero's flying machine consists of large wings made of oiled boxwood, leather, silken cords, and a small quantity of steel, operated by both arm and leg power. The parasol-like structure over the head can be rapidly opened and closed to provide lift and propulsion in a

way similar to that described a generation earlier in the flying machine of Ralph Morris. As in the work attributed to Morris, a serious attempt to suggest a practical means of flight is given a fictional setting. The book was long popular, especially with female readers.



**Faujas de Saint-Fond, Barthélemy,
1741-1819**

Description des expériences de la machine aérostatique de MM. de Montgolfier, et de celles auxquelles cette découverte a donné lieu. Suivie de recherches sur la

hauteur à laquelle est parvenu le ballon du Champ-de-Mars. . .
A Paris, Chez Cuchet, 1783-1784.

2 v. illus. 20 cm.

Vol. 2 has title: *Première suite de la Description des expériences aérostatiques.*

1. Balloons, 2. Montgolfier, Joseph, 1740-1810. 3. Montgolfier, Étienne, 1745-1799

TLB273.F25

Brockett 4376, 4378; Gamble 563

Other copies and editions in the Gimbel collection:

TLB273.F25 1784: 2nd ed., Paris, 1784, Brockett 4377; TLB273.F25 1784a: another ed., Bruxelles, 1784; TLB273.F25 1784d: *Beschryving der*

proefneemingen..., Dutch trans. by Martinus Houttuyn, Amsterdam, 1784, Brockett 4375; TLB273.F25

1784d2: *Vervolg der proefneemingen...*, [=continuation of the experiments...], preceded by *Beschryving der*

proefneemingen...], Dutch trans. by Martinus Houttuyn, Amsterdam, 1784; TLB273.F25 1784g: *Beschreibung der Versuche...*, German trans., Leipzig, 1784-1785,

Brockett 4374; TLB273.F25 1784g2: *Der Herren Stephan und Joseph Montgolfier Versuche...*, 7 p., 8 pl.,

extract by C.G. von Murr, Nürnberg, 1784;

TLB273.F25 1784i: *Descrizione delle esperienze...*, Italian trans., Venezia, 1784.

A long period of preparation preceded the first manned flight in a free balloon, which took place on November 21, 1783. Among the many enthusiasts keen to assist the experimenters was Faujas de Saint-Fond, a geologist then in his early forties. An ebullient and energetic man, he organized a subscription on behalf of the inventor of the hydrogen balloon, Jaques Alexandre César Charles—although characteristically without first asking for Charles' agreement—and helped with the work that culminated in the first unmanned flight. He was equally enthusiastic about the subsequent successes of the Montgolfier brothers and wrote this very circumstantial account of the events throughout the period. Each of the flights is described in detail, with tables of weights, dimensions, and so on. The text is accompanied by excellent engravings showing the apparatus used both for hydrogen and for hot-air balloons. The illustration here shows the balloon in which a sheep, a cock, and a duck were flown during the experiment with a montgolfière, 57 feet high and 41 feet in diameter, at Versailles in the presence of Louis XVI and his entourage, September 19, 1783. After the landing the animals were found to be in good shape, although half an hour before takeoff the sheep had kicked and damaged the cock's right wing,

an accident that some reports falsely attributed to the rigors of the flight. Faujas complains about the sensational and inaccurate accounts that circulated after each experiment.



**Charles, Jacques Alexandre César,
1746-1823**

*Représentation du globe aérostatique qui s'est élevé de
dessus l'un des bassins du jardin royal des Thuilleries
le 1^{er}. décembre 1783, à 1. heure 40. min^{tes}.*

Avec le récit de son voyage aérien... [Paris 1783?].

xv p. 2 fold. col. pl. 26 x 20 cm.

Author's name appears in note on t.-p.: the ascension was undertaken by the author and M.N. Robert. French and Spanish in parallel columns.

"Article du Journal de Paris de 13 & 14 décembre 1783."

1. Balloon ascensions. 2. Robert, M.N. I. Title. TLB276.C4R42

Other copies and editions in the Gimbel collection: TLB276.C4R42a: French and Italian in parallel columns, [Venezia, 1783].

Some three months after the first ascent of a hydrogen balloon, Charles and his assistants, A.J. and M.N. Robert (brothers who developed the gas-producing apparatus), announced a free manned flight to rival that of the montgolfière that had taken place on November 21, 1783. After some delay the flight was successfully made before a huge crowd on December 1, 1783. Charles, a scientist and the inventor of the hydrogen balloon, was accompanied by one of the Robert brothers. The strong netting over the upper half of the balloon was intended to prevent its bursting as it rose into the thinner

atmosphere. After a first landing, some 24 miles from Paris, Robert was left behind while Charles continued alone, rising to an altitude of 9,000 feet and making observations as he did so. The first balloon ascents coincided with, and were of course to a large extent the consequences of, the intense interest in science—and especially in chemistry—which characterized the final decades of the eighteenth century.



**Pilâtre de Rozier, Jean-François,
1754-1785**

Première expérience de la Montgolfière construite par ordre du roi, lancée en présence de Leurs Majestés... par M. Pilatre de Rozier... le 23 juin 1774.

Imprimé aux frais du gouvernement...

A Paris, De l'imprimerie de Monsieur, 1784.

20 p. 26 cm.

Head-piece.

Name originally: Jean-François Pilastre Desroziers.

1. Balloon ascensions. I. Title.

TLB276.P6A34

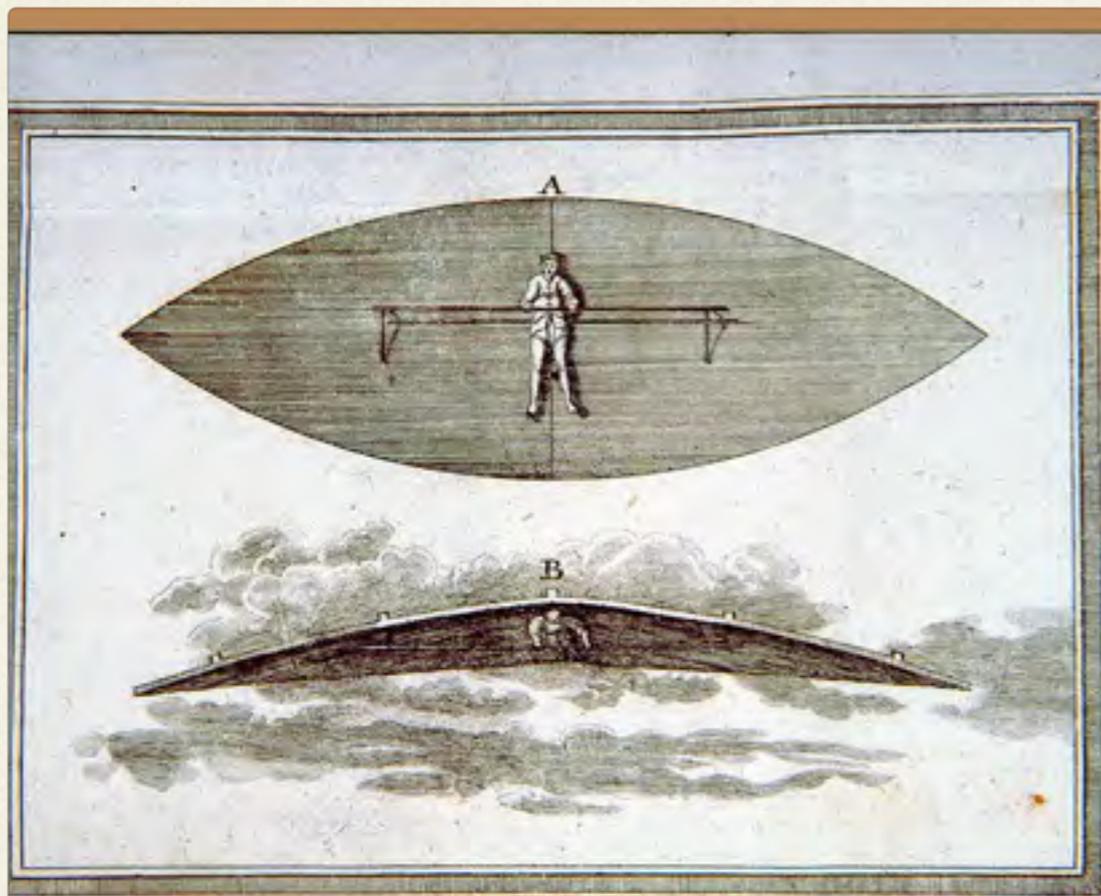
Brockett 9754

Other copies and editions in the Gimbel collection:
TLB276.P6A34 1784: 2nd ed., with date on t.-p.
corrected, Paris, 1784.

A young man in his twenties, with some scientific experience, Pilâtre de Rozier was keen to be involved in the early balloon experiments and offered his services. Apart from the likelihood that Jacques-Étienne Montgolfier allowed himself to be raised some days before him, Pilâtre was the first to be lifted free of the earth in a tethered balloon. On November 2, 1783, he was accompanied by the Marquis d'Arlandes on the first demonstration of free flight. In this account of a flight in the following year, Pilâtre, who was accompanied by the chemist Joseph-Louis Proust (1754-1826), writes almost ecstatically, focusing especially on the peace experienced by those

suspended beneath a free balloon: "it seemed, from the tranquillity with which we sailed, that we were carried along by the diurnal rotation of the earth." By his own account, they reached an altitude of 11,732 feet. Twenty-minutes after landing, the sense of peace was dissipated when strong winds pushed the balloon over, causing the brazier to damage it.

Pilâtre subsequently made many more flights before the first air crash on June 15, 1785, when he and a companion fell to their deaths from a height of about 1 mile in a burning balloon. Their vehicle on that occasion was inherently dangerous: a compound structure consisting of a montgolfière with a hydrogen balloon coupled above it.



Meerwein, Karl Friedrich, 1737-1810

L'art de voler à la manière des oiseaux, par Charles Frédéric Meerwein... A Basle, chez J.J. Thourneysen, fils, 1784.

48 p. 2 fold. pl. 18.5 cm.

First published in German.

"Lettre de m. de G*** ^ m. Meerwein": p. 36-44.

"Response à cette lettre, sous le nom de m. Merrwein [sic], par un ennemi juré des voleurs": p. 45-48.

1. Ornithopters. I. Title.

TLD624.M49 1784

Brockett 8311

Other copies and editions in the Gimbel collection:

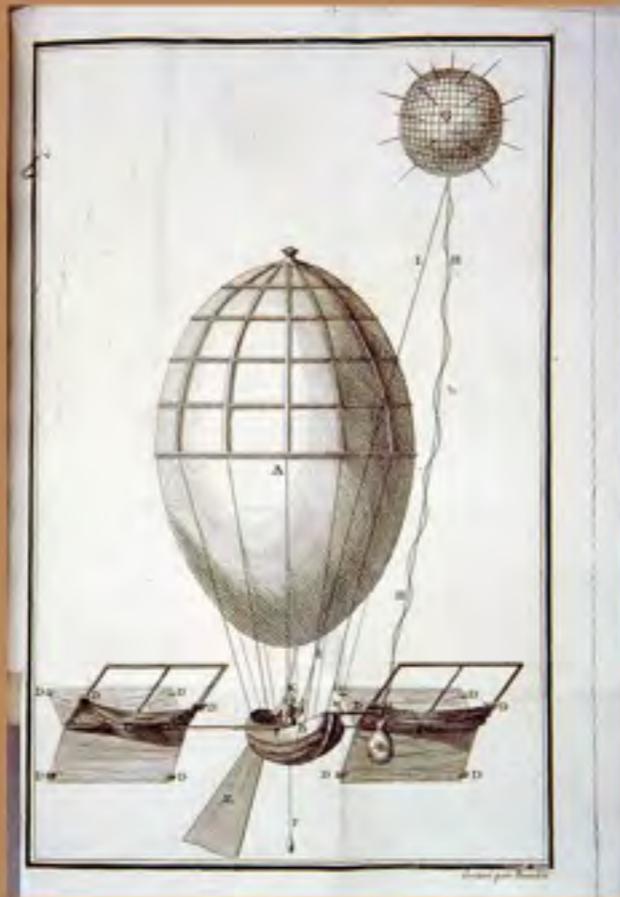
TLD624.M49 1784: a second copy, wanting t.-p.;

TLD624.M49 1785: 2nd French edition, Basle, 1785;

TLD624.M49 1785: a second copy.

Meerwein, who lived in a small town in western Germany, began experiments with ornithopters in 1781. He published his suggestion in a series of articles, in German, in January 1783. An expanded and improved version, which was widely read, was published as a book in 1784. This French translation, published in the same year, is a modified version of the German original with the addition of two facetious letters. A Portuguese translation appeared in 1812. The span of Meerwein's ornithopter wing is 30 feet, and the maximum cord 10 feet. The mechanism is a simple up-and-down flapper operated by pushing down on the rod that the pilot is shown

holding. The fully raised wings lie at an anhedral angle of about 9 degrees. Although the diagram does not show it, Meerwein specifies a fan-shaped tail: between the legs of a specially made pair of trousers reached to below the feet is to be sewn a piece of cloth sufficiently wide to allow the legs to be spread. Meerwein envisages the use of this tail not for stability but as an aid to directional control—a common belief about the primary function of a bird's tail. There is no undercarriage, and the only provision for the pilot's safety and comfort is a face mask to enable him to breathe while speeding through the air. Together with the practical attempts at flight being made in France at the same time by Jean-Pierre Franois Blanchard (*cf.* below, Blanchard, *An exact and authentic narrative*, 1784) this exercise in primitive aeronautics helped to encourage other experiments, both serious and facetious.



Bourgeois, David

Recherches sur l'art de voler, depuis la plus haute antiquité jusqu' à ce jour; pour servir de supplément à la Description des expériences aérostatiques de M. Faujas de Saint-Fond. Par M. David Bourgeois...
A Paris, Chez Cuchet, 1784.

viii, 143, [1] p. 20.5 cm.

1. Aeronautics—Hist. 2. Balloons.

TLB273.D44 no.1

Other copies and editions in the Gimbel collection:

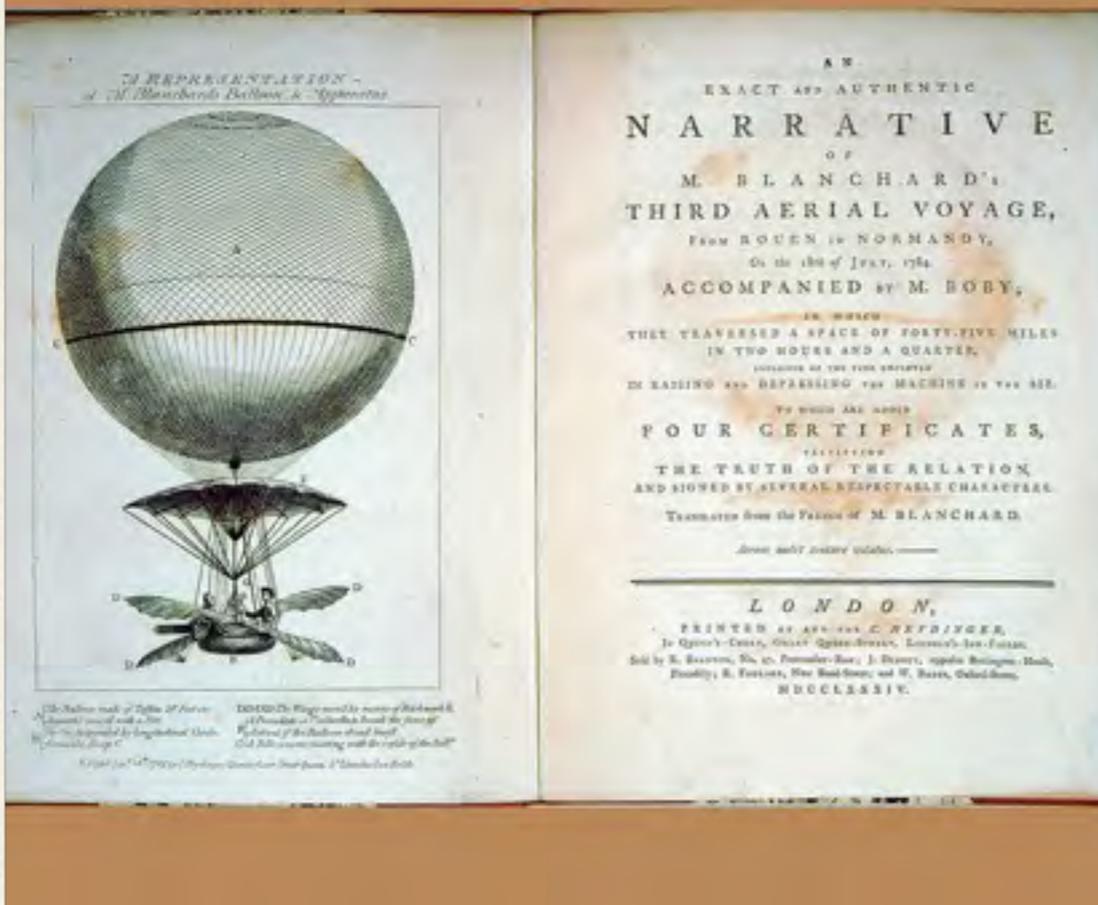
Two other identical copies, TLB398.B77;

TLB155.A247 no.1

Brockett 2071

One of the scores of books published in the year or two following the successful balloon flights of 1783, this work counts as one of the earliest extended attempts to write a history of aviation. Although Bourgeois' "researches" are anything but rigorous, he summarizes a substantial body of material about early flying stories, beginning with Abaris, continuing with other classical and mythological figures, including Daedalus and Archytas, and summarizing the theories of early scientists. In all, he discusses twenty-eight writers and experimenters, including Bacon, Albert of Saxony, Leonardo, della Porta, Cyrano, Kircher, Lana, Gusmano, and Galien. In the middle of the book, Bourgeois passes on to the principles of aerostation, the achievement of a practical balloon, and the problem of directional control. In his concluding pages he quotes passages from Lana and from Giovanni Alfonso Borelli, who, in his *De motu*

animalium (2 v., 1680-1681, see Appendix), had demonstrated the impossibility of flying by the use of human muscle power alone.



Blanchard, Jean-Pierre, 1753-1809

An exact and authentic narrative of M. Blanchard's third aerial voyage, from Rouen in Normandy, on the 18th of July, 1784. Accompanied by M. Bobby; in which they traversed a space of forty-five miles in

two hours and a quarter, inclusive of the time employed in raising and depressing the machine in the air. To which are added four certificates, testifying the truth of the relation, and signed by several respectable characters. Translated from the French of M. Blanchard... London, Printed by and for C. Heydinger, 1784.

2 p. l., [iii]-viii, 17 p. front. 28 x 22.5 cm.
TLB276.B6A15

1. Balloon ascensions.

Other related books in the Gimbel collection: The collection also holds accounts of his fourth voyage (English: TLB276.B6A25), fifteenth voyage (French: TLB276.B6A258), sixteenth voyage (French: TLB276.B6A26), forty-fifth voyage (English: TLB276.B6A29 1793, with two later copies: photocopy TLB276.B6A29; reprint TLB276.B6A29 1918), forty-fifth voyage (French: TLB276.B6A29f). For the forty-fifth voyage, see below, Blanchard, *Journal*, 1793.

Brockett 1888; Gamble 468

Born on July 4, 1753, in Normandy, Blanchard (who became a skilled mechanic) was a man of relatively

humble birth and an egotist of almost ruthless determination. In the early 1780s he made several attempts to build heavier-than-air machines, one of which had four wings, fore and aft, for lift, with another four, intended to provide forward propulsion, placed at the center. Despite failures, he persisted for some time before allying himself with the balloon experimenters. In 1784 he built a hydrogen balloon that, for safety, had a parachute placed under the bag on the top of the rigging and a pair of double-ended paddles worked by a treadle mechanism. Just before the launch, on March 2, 1784, an unfortunate quarrel led to Blanchard's being wounded in the hand; at the same time the balloon and some of its equipment were damaged. Blanchard nevertheless undertook the flight, reaching an altitude of something like 12,500 feet. In his account of his third flight, on July 18, 1784, he alleges that he was able to exercise some control over the balloon by the use of the paddles. In the years that followed, he made a precarious living from demonstrations of balloon flights, including one across the English Channel and others in the United States. In 1809 he died—remarkably enough, of natural causes—having made either 59 or 60 flights. His widow then took over, making 67 flights in all before falling to her death after having set fire to her

balloon by indulging her showman's habit of setting off fireworks while aloft.



Lunardi, Vincent, 1759-1796

An account of the first aërial voyage in England, in a series of letters to his guardian, Chevalier Gherardo Compagni, written under the impressions of the various events that affected the undertaking, by

Vincent Lunardi... London, Printed for the author, sold... by J. Bell [etc.], 1784.

2 p. l., 66, [1] p. front. (port.) fold. pl. 21.5 cm.
 1. Balloon ascensions.

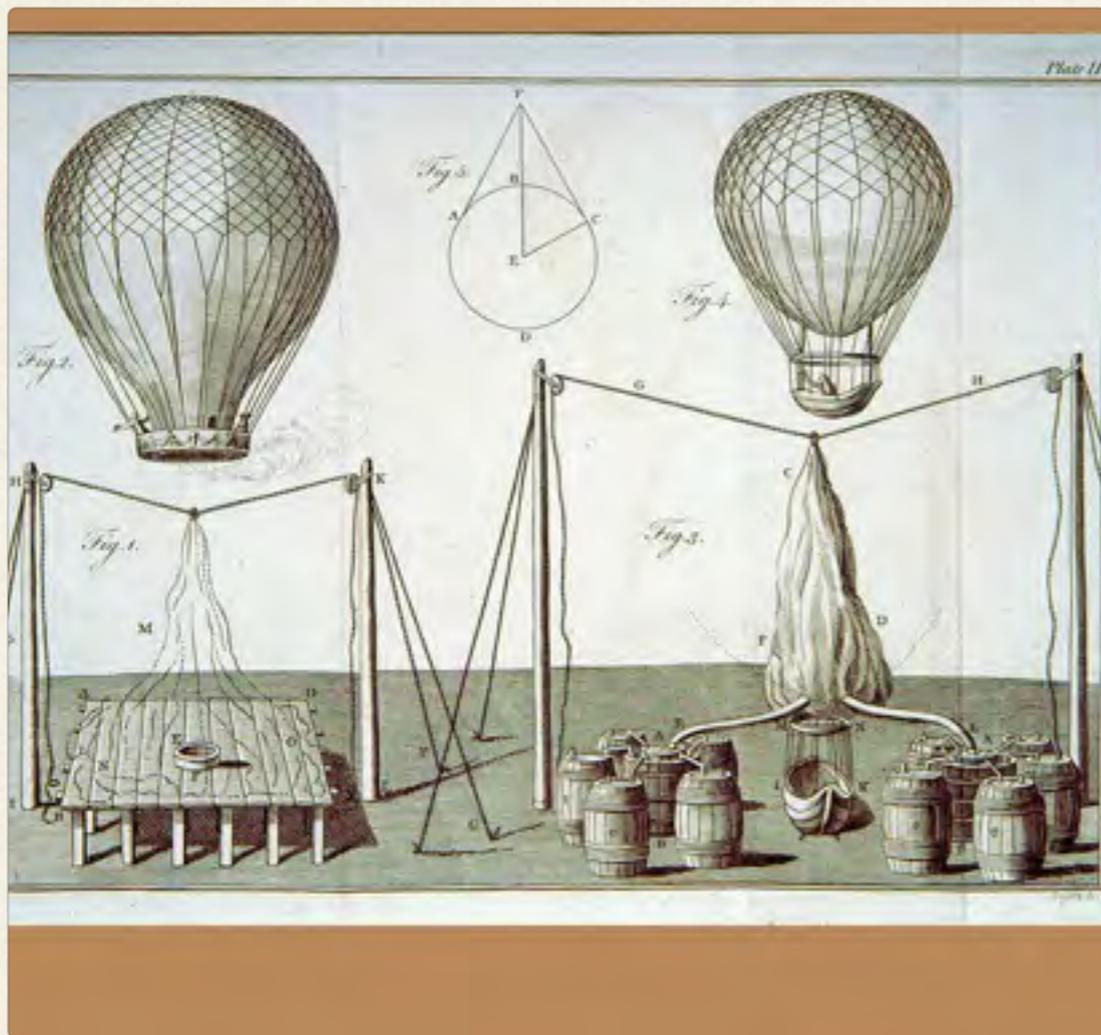
TLB276.L8A16

Brockett 7816; Gamble 695

Other copies and editions in the Gimbel collection:
 TLB276.L8A16 1784: 2nd ed., London, 1784.

An attaché of the Neapolitan embassy in London, Lunardi had the temperament of a showman. Determined to arrange the first real balloon ascent to take place in England, he constructed a hydrogen balloon, which he first exposed to view in the Strand to an estimated attendance of 20,000 visitors. On the afternoon of September 15, 1784, in the presence of George III, his Prime Minister William Pitt, the Younger, and a huge crowd, he flew from the Artillery Ground. (The best seats cost 5 shillings.) Written in the form of an epistolary novel, consisting of a series of letters to his guardian, his book provides a vivid account of the day-to-day difficulties he encountered in bringing his project to fruition. He had intended to fly in the company of another aeronaut, George Biggin, but the impatience of the crowd caused him

to take off when the balloon had been sufficiently filled with gas to allow only one man to rise: "hesitation and delay, would have been construed into guilt" (p. 30). He did, however, take with him a pigeon (which escaped), a dog, and a cat. As is shown in the illustration, the balloon, 33 feet in diameter, was (pointlessly) equipped with a pair of oars one of which almost immediately broke and fell off, narrowly missing a spectator. Although the flight had no special technological significance, it contributed greatly to public sympathy for such exploits. In his account, Lunardi writes amusingly, if also with some edge, about the volatile reactions of the public and of the officials with whom he had to deal. Once success was evident, the flight was enthusiastically received and commemorated in a flood of verse, pamphlets, and decorated ceramic ware.



Cavallo, Tiberius, 1749-1809

The history and practice of aerostation. By Tiberius Cavallo, F.R.S. London, Printed for the author and sold by C. Dilly [etc.], 1785.

viii, 326, [7] p. 2 fold. pl. 21.5 cm.

1. Aeronautics—Hist.

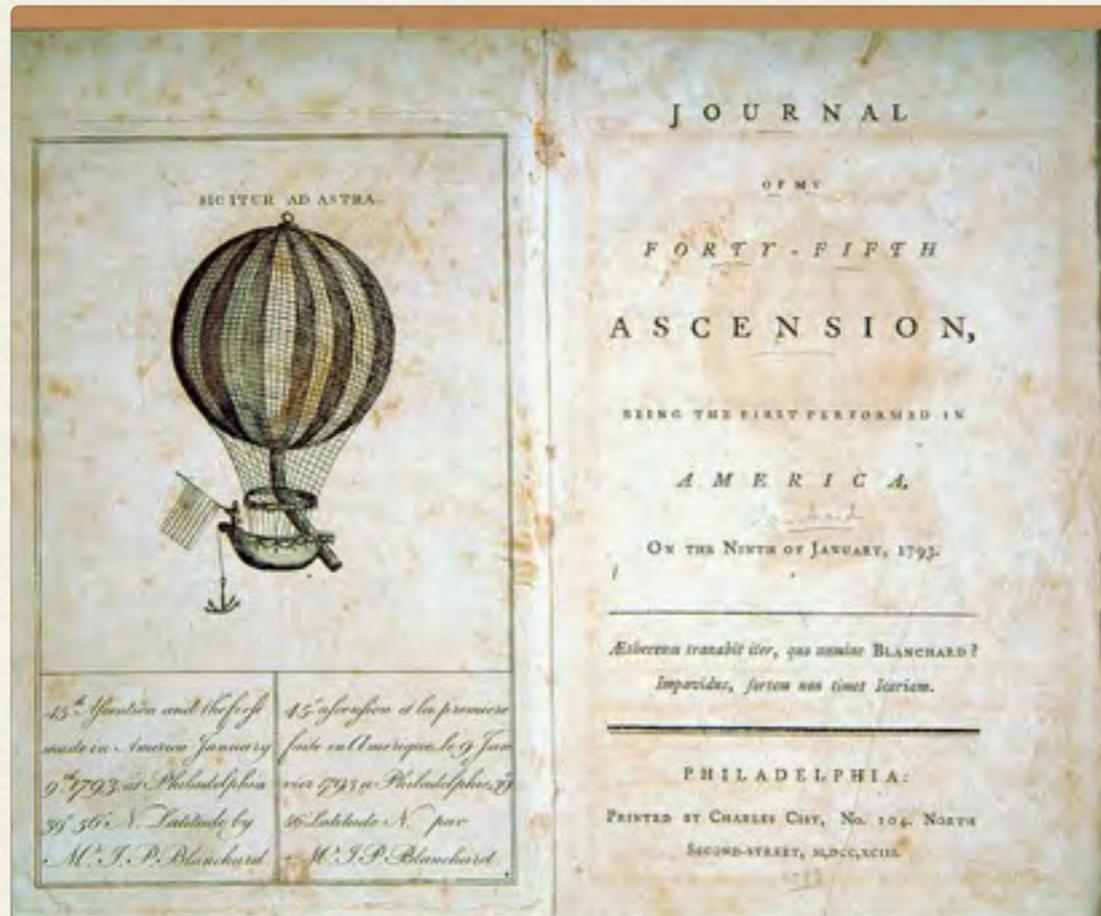
TLB273.C16

Brockett 2610; Gamble 499

Other copies and editions in the Gimbel collection:
 TLB273.C16 1786: *Histoire et pratique de l'aërostation...*,
 French trans., Paris 1786.

An Anglo-Italian electrician and mathematician, Cavallo was born in Naples but came to England in 1771. He wrote several scientific treatises, mainly related to electricity and gas. A practical man, Cavallo experimented with the most suitable envelopes for balloons. He was among the first to make soap bubbles rise by filling them with hydrogen. Cavallo's history focuses almost exclusively on recent events. Of the twenty-three chapters in his book, all but the first part of Chapter 1 treat the history of ballooning during the two or three years following the experiments of Charles and the Montgolfiers. Although brief, his remarks on the thoughts and achievements of earlier centuries are in general well judged. He considers, but rejects the notion that the dove of Archytas might have been filled with "inflammable air" (hydrogen). If such a thing had been built, he says, it must have been so vast that it

could hardly have passed into oblivion. In his summary of later commentators and experimenters, he makes his prejudices plain by dismissing the value of anything to do with heavier-than-air flight. The only earlier writer whom he respects, despite the impracticality of his proposal, is Lana.



[Blanchard, Jean-Pierre] 1753-1809

Journal of my forty-fifth ascension, being the first performed in America, on the ninth of January, 1793... Philadelphia, Printed by Charles Cist, 1793.

27 p. front. 21 cm.

Dedicated to George Washington. Signed: Blanchard.

1. Balloon ascensions. 1. Title.

TLB276.B6A29 1793

Brockett 1897; Gamble 470; R-P 5

Other copies and editions in the Gimbel collection: TLB276.B6A29f: *Journal de ma quarante-cinquieme ascension, la premiere faite en Amerique, le 9. janvier, 1793...*, Philadelphie, de l'imprimerie de Charles Cist, 1793, 27 p. front. 20 cm. R-P 4. This is the very rare French edition published by the same printer in the same year. As Blanchard spoke no English, it is presumably the original text. See also above, Blanchard, *An exact and authentic narrative...*, 1784..

Prompted mainly by a desire to find a new audience for his well-organized "balloon show," Blanchard decided, in December 1792, to try his luck in the United States, which, "so interesting by its situation, offered to my emulation an attraction which I could not resist." His first flight was an immediate popular success. On January 9, 1793, using a hydrogen balloon, he flew from the jail in Philadelphia—a choice of site dictated largely by practical considerations, though not without political

implications. The ascent was watched by George Washington and a large number of other notable individuals. Blanchard reports that on the way he encountered and frightened a flock of birds and that when he had reached his maximum altitude (a little over a mile), a small black dog that a friend had entrusted to him as a companion showed signs of airsickness. He bottled samples of air and checked his own pulse rate (which had risen from an already high 84 to 92). He ate a little biscuit, drank a little wine, and prepared to descend. After the landing a frightened local assisted him—once Blanchard had persuaded him to try some of his wine—and was soon joined by others. By Blanchard's reckoning, this ascent was his forty-fifth, which he described in an almost euphoric manner. Although it made him famous in America, the flight was a financial disaster. He stayed on for another five years but with no greater success and in 1798 returned to France, saying that the visit had ruined him.



Robertson, Étienne Gaspard, 1763-1837

La Minerve, vaisseau aérien destiné aux découvertes, et proposé à toutes les académies de l'Europe; par le physicien Robertson... 2 éd., rev. et cor. Vienne, De l'imprimerie de S. V. Degen, 1804; réimprimé à Paris, chez Hocquet, 1820.

iv, [5]-36 p.pl. (1 fold.) 20.5 cm.

"Ex libris Gaston Tissandier."

1. Balloons. I. Title.

TLD932.R65

Brockett 1042; Gamble 781

Related holding in the Gimbel collection:

TLB276.R64A24: *Extrait du rapport fait à l'Académie des Sciences de Saint-Petersbourg, par Robertson, de son voyage aérostatique avec M. Sacharoff, [n.p., 1804].* Extract from *Annales de Chimie*, v. 52, [121]-142.

This remarkable design for a vast airship is a spin-off from the early interest in the potential value of balloons for scientific investigation. In 1803 the Saint Petersburg Academy of Science arranged to have a series of experiments made at altitude. These included gathering samples of air and measuring magnetic dip. The observations, of doubtful value, were made in January 1804 by Robertson, accompanied by Sacharoff, a member of the Academy. The list of items taken on the flight provides an interesting insight into the methods used: chronometer, barometer, thermometer, pigeons, other birds, megaphone, telescopes, firearms, chemicals, quick-lime, gas-jars, money, water, wine, bread, cooked chicken, and other food. (For his first flight in

England, Lunardi was also provided with wine, bread, and chicken.) Although styling himself a physicist, Robertson was not altogether dedicated to the sciences but enjoyed playing the role of part-time entertainer.

The *Minerve* is among the largest balloons ever conceived. A charlière (a hydrogen balloon named after its inventor, physicist J.A.C. Charles) with a diameter of 150 feet, it was designed to carry a load of 161,000 pounds including a company of 60 scientists. As the illustration makes clear, it is imagined as a true flying ship, complete with dinghy, or jolly-boat (in the form of a smaller balloon), an anchor, and ample accommodation for the travelers, including a full-size church, a library or study (on the gallery), and a gymnasium (under the prow). The main hull could be used as a conventional ship in the event of a mishap over water. (The proportions of the diagram are not, of course, always worked out.) As the ship is not normally immersed in water, other accommodation and provisions could be slung below. The suspended accommodation at the rear is intended for a small number of female observers, who would be kept apart from the men for fear of distracting them (perhaps a disguise for a brothel). Despite the pointless provision of a log at the rear,

Robertson is aware that a technique for directing the horizontal movement of a balloon had not then been developed. The forward sail is intended only to show whether the balloon is rising or descending. The *Minerve* is neither designed for the benefit of an idyllic society nor intended, as were some earlier imaginary flying machines, to enable mankind to get away from it all. It is equipped with cannons and a strong military presence: outside the church and on the upper equatorial gallery, guards may be seen on duty, one of them standing by a gas-lamp standard—a recent invention. Named for the goddess of wisdom, the *Minerve* was intended to make possible scientific study of the whole globe as the vehicle drifted from place to place. Wherever it goes, says Robertson, there will be things of interest. The banner at the top bears the inscription *Scientiarum favore*: "By the grace of knowledge."

Already to some degree a scientific joke, Robertson's concept was several times parodied by later artists and commentators.

Merkwürdige Begebenheiten
alter und neuer Zeit.

- | | |
|---|---|
| 1) Die Flucht von der Insel. (nach der Ab-
bildung bei Alexander Jacob Degen.) | 6) Der Versuch von Göttingen. (nach Kallenberg) |
| 2) Der Gallienkrieg. (nach Strabo) | 7) Die Flucht von Göttingen. (nach Kallenberg) |
| 3) Die Flucht von Göttingen. (nach Kallenberg) | 8) Die Flucht von Göttingen. (nach Kallenberg) |
| 4) Die Flucht von Göttingen. (nach Kallenberg) | 9) Die Flucht von Göttingen. (nach Kallenberg) |
| 5) Die Flucht von Göttingen. (nach Kallenberg) | 10) Die Flucht von Göttingen. (nach Kallenberg) |



Der Flieger Mech. Jakob Degen.

***Dresdner Chronicken, und Geschichts,
Calender 1809***

Dresden, Christian August Otto, [1809].

[56] p. illus. 21 x 17.5 cm.

Cover title.

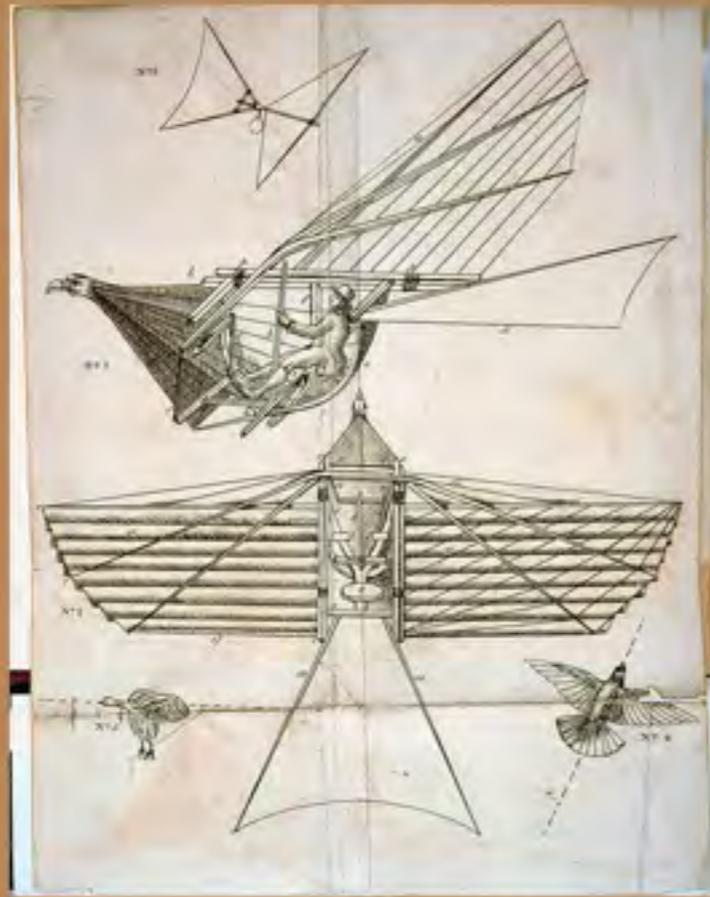
Imperfect: back cover wanting.

Partial contents: *Auch fliegen kann der Mensch...* Jakob Degen, p. [29-32]. Illus.

1. Almanacs, German. 2. Degen, Jakob, 1750-1848. AY854.D7

A Swiss, and by profession a clock-maker, Jakob Degen lived in Vienna. Between about 1807 and 1817 he spent much of his time experimenting with flying machines, some of which he tested in public in Vienna's Prater Park. The most celebrated of his inventions, illustrated here, was misrepresented in press reports and in some drawings, winning for Degen an unjustified reputation as a charlatan. As shown, Degen hoped to be able to fly with a pair of flappers operated, like those of Meerwein, by a depressible rod. Unlike Meerwein's, Degen's wings were fully trussed and were made not of a single unbroken surface but of 3,500 flap valves cut from varnished paper. The valves closed on the downstroke and opened on the upstroke. When he tried the apparatus indoors, he was able to obtain some lift but could raise himself from the floor only when he partially counterbalanced himself and his machine with a pulley-and-weight system. Taking

advice from a visiting journalist, Degen decided to replace the pulley and weight with a small balloon and to try the combination out of doors. With this apparatus he gave demonstrations not only in Vienna but also in Berlin and Paris. It was in Paris that a crowd, disappointed by the quality of his display, mobbed him and caused him serious injury. Reports of Degen's experiments, widely circulated, stimulated many other experimenters, including in particular one of the most important figures in early aviation history, Sir George Cayley. They also caught the attention of a less fortunate man, Albrecht Berblinger, the so-called tailor of Ulm who, in the presence of King Frederick of Württemberg, tried to fly across the Danube in 1811 using a copy of Degen's wings but without taking the precaution of making prior tests. He fell into the river from which he had to be fished out by passing sailors. A replica of the tailor's apparatus can be seen in the Rathaus at Ulm.



Walker, Thomas, portrait painter

A treatise upon the art of flying, by mechanical means, with a full explanation of the natural principles by which birds are enabled to fly; likewise instructions and plans for making a flying car

with wings, in which a man may sit, and, by working a small lever, cause himself to ascend and soar through the air with the facility of a bird... By Thomas Walker, portrait painter, Hull. Printed by Joseph Simmons, and sold by Longman, Hurst, Rees, & Orme, London, 1810.

x, [5]-67 p. fold. col. front. 22.5 cm.

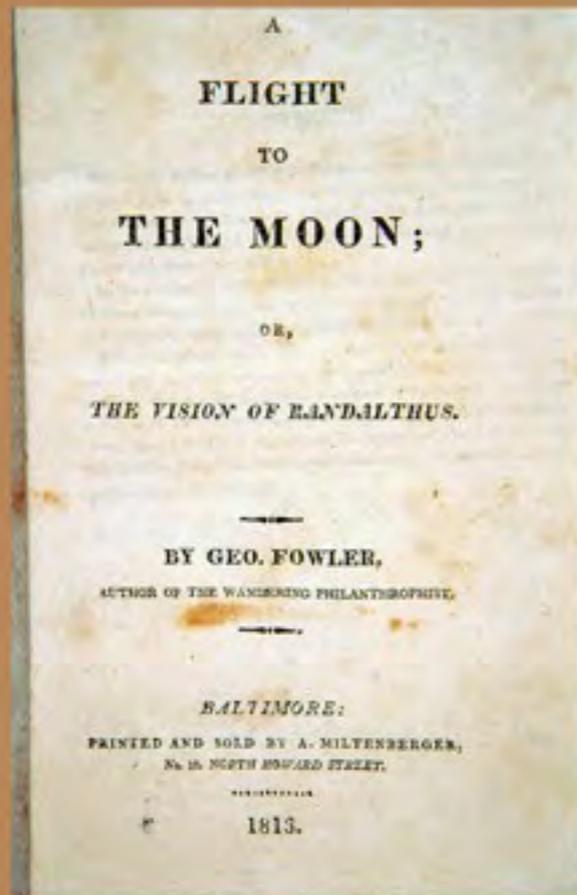
1. Flight. 2. Ornithopters. I. Title: The art of flying. TLD209.W17

Brockett 12618; Gamble 2229; [R-P7,8]

Other copies and editions in the Gimbel collection: TLD209.W17 1814: first American ed., New York, 1814, Brockett 12616 TLD209.W17 1910: reprint with facsimiles of t.-p.s of first ed. (1810) and of 2nd ed. (1831), [London], 1910.

The true mechanism of bird flight was not understood until recent times, and indeed some aspects of the matter are still undergoing investigation. Leonardo's ornithopters were fundamentally flawed in conception, as indeed were virtually all those proposed in later centuries, including Thomas Walker's. Although he does not make the old mistake of thinking that birds strike their wings down and back, his theory of flight, based on the elasticity of air, is wholly mistaken. (He drew

false conclusions from the flight of the small paper glider drawn at top-left of the illustration.) His book, especially in the revised edition of 1831, was nevertheless influential. Using calculations based on published studies of the condor, Walker proposed a rather heavy structure in which the flier sits in something akin to the cockpit of a light airplane. He operates the wings by pushing the stick-like lever backward and forward through a very wearying total distance of 3 feet. Control of ascent, descent, and turns would come from shifting the pilot's center of gravity. After having observed birds landing, he suggested a quick nose-up pitch immediately before touchdown. In the revised edition published in 1831, Walker moved away from his focus on a bird-like configuration and proposed a tandem-wing structure foreshadowing that of Samuel Pierpont Langley's machines.



Fowler, George

A flight to the moon; or, The vision of Randalthus.
By Geo. Fowler. Baltimore: Printed and sold by
A. Miltenberger, no. 10. North Howard Street,
1813.

185 p. 18 cm.

1. Moon. 2. Voyages, Imaginary. I. Title.
TLE1041.F78

An early American example of the moon-journey, Fowler's little-known book is indebted to Swift and to Cyrano de Bergerac, from whom he took, among other things, the idea that the hero would turn over halfway between the earth and the moon as gravity was reversed. He is also indebted to the many representations of Diana, Luna, or Selene, goddesses of the moon, who were often imagined as surrounded by a fine white haze or mist. Fowler's hero, Randalthus, is led to the moon by a beautiful woman enveloped in a milk-white cloud. She announces to him that he is "destined to visit the moon!"

She here vanished in a vivid flash of light, but I was greatly astonished when I found myself encompassed apparently in the very cloud in which she had appeared, and swiftly advancing above the confines of the earth. I hardly had time to look down and behold the gradual disappearance of the earth before every part of it seemed involved in confusion. (p.7)

In some respects the book's opening pages present a variant of the myth of Endymion, the beautiful young shepherd with whom the goddess of the moon fell in love. The imagery of those pages sometimes anticipates that of Keats' treatment of the theme in his long poem *Endymion* (1818). Writing the bulk of the book in the style of early pedagogic dialogue-treatises, Fowler has his hero instruct the Lunarians, and thereby the reader, in basic physical matters such as the nature of the tides and the reflection of earth-light by the moon. Following a familiar and well-established convention, he also uses the journey to exotic places as an excuse for offering moral and satirical comments about the state of society on earth.



[Locke, Richard Adams] 1800-1871

Great astronomical discoveries lately made by Sir John Herschel. . . at the Cape of Good Hope. [n.p., 1835]

28 p. 25 cm.

First published in the *New York Sun*, from the Supplement to the *Edinburgh Journal of Science*.

A hoax.

1. Herschel, Sir John Frederick William, 1792-1871.
I. Title.

QB52.L81 1835g

Other copies and editions in the Gimbel collection:
QB52.L81 1835: *Grandes descubrimientos astronómicos hechos recientemente por Sir John Herschel...*, trans.

Francisco de Carriou [*sic*], Habana, 1835; QB52.L81 1835d: *Découvertes dans la lune...*, traduit de l'Américain, Turin, 1836; QB52.L81 1835f: *Delle scoperte fatte nella luna dal Dottore Herschel*, Firenze, 1836, Italian trans., with front.; QB52.L81 1836: *Grandes descubrimientos...*, 2nd ed., Madrid, 1836; QB52.L81 1836b: *Découvertes dans la lune...*, another ed., with ms. notes by A. Baron (1864, Lausanne, 1836; QB52.L81 1836d: another ed. of the Italian version, Livorno, 1836; QB52.L81 1836e: another ed. of the Italian version, [n.p., 1836]; QB52.L81 1836g: *Neuste Berichte...*, German trans., Hamburg, 1836; QB52.L81 1836i: *Intorno alle scoperte fatte nella luna*, [perhaps = the first Italian edition], [Ravenna, 1836]; QB52.L81 1836p: *Publication*

compte des nouvelles découvertes de Sir John Herschel..., another version of the French ed., Paris, 1836; QB52.L81 1852: *The celebrated "moon story," its origin and incidents...* by William N. Griggs [with the original articles], New York, 1852; QB52.L81 1859: *The moon hoax...*, another reprint, New York, 1859; QB52.L81 1975: a reprint of the previous item, Boston, 1975.

This entertaining spoof was first published in the *New York Sun* in 1835. It caught the public imagination, increased the paper's circulation fivefold (or so claimed the proprietors), and was quickly reissued as a pamphlet. In the following months it also appeared in French and Italian. The hoax alleged that the Herschel telescopes had been able to detect wonders on the moon's surface, including a numerous race of batmen. The illustration (which is from the frontispiece to the Italian translation, Firenze, 1836) shows a curious mixture of ballet-dancer and primitive warrior, with wings derived both from Paltock's Glums and from Restif's inventive hero. About 4 feet tall, the Lunarians had glossy, copper-colored hair and prominent mouths giving them a generally simian appearance. Their bat-like wings (not accurately represented in the illustration) could be spread very wide or folded neatly against the back. Locke concludes his account of these creatures by

making an oblique allusion to unseemly sexual behavior about which he declines to elaborate: "they are doubtless innocent and happy creatures, notwithstanding some of their amusements would but ill comport with our terrestrial sense of decorum." As in Paltock and Restif, flight and eroticism are readily combined in the imagination. In the last paragraph of his account, Locke returns to the batmen, inventing a virtuous breed of them to set alongside their amoral and unenlightened fellow creatures. Elsewhere on the moon the observers discovered, he says, a "very superior species of the Vespertilio-homo," as beautiful as angels and wonderfully skilled in the arts. As so often, a parable of good and bad flight emerges. The whole is couched in flat, pseudo-scientific language intended to allay doubts. For a time many people were persuaded that this work was indeed a serious report of findings by famous astronomers.



Wise, John, 1808-1879

A system of aeronautics, comprehending its earliest investigations, and modern practice and art. Designed as a history for the common reader, and guide to the

student of the art. In three parts. Containing an account of the various attempts in the art of flying by artificial means, from the earliest period down to the discovery of the aeronautic machine by the Montgolfiers, in 1782, and to a later period. With a brief history of the author's fifteen years' experience in aerial voyages. Also, full instructions in the art of making balloons... By John Wise... Philadelphia, Joseph A. Speel, 1850.

xvi, [17]-310 p. front. (port.) pl. 22.5 cm.

An enlarged edition was issued in 1873 under the title *Through the Air*, Brockett 12948.

1. Aeronautics—Hist. 2. Balloons.

TLB251.W81

Brockett 12945; Gamble 849; R-P 28

Other copies and editions in the Gimbel collection: five other copies of this edition.

Born in Lancaster, Pennsylvania, in 1808, John Wise was probably the most celebrated of all American balloonists. Although his attempt to fly across the Atlantic in 1859 ended in failure, it established a world record for distance—about 809 miles—which stood until 1910. With three companions he had flown from St. Louis, Missouri, to Henderson,

Jefferson County, New York, in 20 hours and 40 minutes. Among the most substantial to have been published by 1850, his book opens with a brief history of aviation written in the spirit of a practically minded up-to-date thinker. Showing little interest in the remote history of his subject, Wise passes quickly on to the experiments in France leading to the first free manned flight. Viewing the events from more than half a century later, he was able to make a cool assessment of the over-zealous imaginings which that success had at first stimulated. Not only were many of the plans for future development impractical, but they were often, in his view, morally and socially suspect. Despite these reservations, Wise celebrates the invention of the balloon, which, in the hands of the sober-minded, he believes to be a potential boon for the future advancement of civilization. In the second of the book's three sections he gives detailed instructions, based on fifteen years' experience, as to how to make and fly a balloon. The book ends with the words: "It would seem as though nature itself cried aloud to us upon this subject, inviting us to its elysian fields to drink in the fluid of life and relieve poor enervated humanity."