Butterflies at the Mouth of Hell: traces of biology of two species of Nymphalidae (Lepidoptera) in European paintings of the fifteenth century

Abstract: The main focus of this study is the three-part altar piece "The Last Judgment" of the Flemish painter Hans Memling (ca. 1430-1494), exhibited in the Muzeum Narodowe, Gdansk, Poland. In that work demons were painted, sui generis, with wings of dark butterflies compatible with those of the nymphalid Aglais urticae (small tortoiseshell) and Vanessa atalanta (red admiral), species widely distributed in Europe. Coincidentally, the larvae of both feed mainly on Urtica dioica (nettle), a plant traditionally used by monks and Catholic saints in practices of self-flagellation. This feature connects these butterflies with the sin of lust and the fires of hell portrayed in the right panel. The position of the wings of V. atalanta on the buttocks of one of the demons can be a reference to the habits of the species landing on excrements. Biological knowledge arising from empirical observation was probably taken into account by Memling in choosing individuals of these species as models, distinguishing such nymphalidae from other butterflies with previously established positive symbolism, as in the case of whitish pierid and papilionidae.

Key-words: iconography; iconology; Christian art; insects; demons; Memling, Hans

Borboletas na Boca do Inferno: traços da biologia de duas espécies de Nymphalidae (Lepidoptera) em pinturas europeias do século XV

Resumo: O principal objeto do presente estudo refere-se ao quadro tríptico “O Juízo Final” do pintor flamengo Hans Memling (ca. 1430-1494), exposto no Muzeum Narodowe, Gdansk, Polônia. Nessa obra, demônios foram pintados, de forma sui generis, com asas de borboletas escuritas perfeitamente compatíveis com as dos ninfaídeos Aglais urticae e Vanessa atalanta, espécies de ampla distribuição na Europa. Coincidentemente, as larvas de ambas alimentam-se principalmente de Urtica dioica (urtiga), planta tradicionalmente utilizada por monges e santos católicos em práticas de autoflagelação. Tal característica relaciona essas borboletas com o pecado da luxúria e
as chamas do inferno retratadas no painel direito. A posição das asas de *V. atalanta* nas nádegas de um dos demônios, impar na iconografia do período, pode se tratar de uma referência aos hábitos da espécie de pousar sobre excrementos. Conhecimentos biológicos advindos de observação empírica foram provavelmente considerados por Memling para a escolha desses modelos, discriminando tais ninfilídeos de outras borboletas com simbolismo positivo então estabelecido, como no caso dos pierídeos e papilionídeos de cor clara.

**Palavras-chave:** iconografia; iconologia; Arte Cristã; insetos; demônios; Memling, Hans

## 1 INTRODUCTION

The biology of insects was poorly recorded in Europe during the Late Middle Ages and early Renaissance, between the 13\(^{th}\) and 15\(^{th}\) centuries. Great encyclopedists of the thirteenth century, such as Albertus Magnus (1193-1280), simply made compilations of the writings of Aristotle (384-322 BC) concerning natural history, and there are few novelties in their works (Papavero, Scrocchi, Llorente-Bousquets, 1995, pp. 136-148). The bestiaries of the period recorded moralizing and sometimes unrealistic narratives, mainly having to do with large animals. In these handwritten works information on insects are scarce, derived from observation of some useful forms such as bees and silkworms. Advances in biological knowledge and taxonomy of insects only occurred from the 16\(^{th}\) century on, with the printing of illustrated works by Ulisse Aldrovandi (1522-1605), Konrad Gessner (1516-1565), and Thomas Muffet (1553-1604), among others.

The pictorial record of small plants and animals between the 13\(^{th}\) and 15\(^{th}\) centuries is quite scant, and is virtually restricted to the realistic backgrounds of paintings and ornamental borders of illuminated domestic prayer books (e.g. *Books of hours*, 1996). This naturalistic current was mainly typical of Northern Europe, especially in the region of the Burgundian Netherlands, which between 1384 and 1530 occupied the area that today comprises Belgium, most of the Netherlands, Luxembourg and parts of northern France (Prevenier & Blockmans, 1983; Kemperdick, 2007, p. 10). European painters of other regions and schools were strongly influenced by the realistic northern tradition during the second half of the fifteenth century, in especial northern Italians (Meijer, 2008) and Germans (Landolt, 1968, p. 115). Thus, the study of this pictorial corpus offers one of the few opportunities to investigate the relationship between man and nature.
in the period, and especially popular knowledge and views concerning insects and other small animals.

Due to their great diversity in morphology and lifestyles, insects were mostly used with symbolic meaning among other natural forms, especially those easily recognized (Dicke, 2000; Impelluso, 2004). Their small size also was an important feature to be considered, since they could be represented discreetly but in proportion to the main elements of the scene, an esthetical requirement of realism of required beginning in the 15th century in visual arts (Kemperdick, 2007, p. 6). Among insects, butterflies were the most frequently found in the backgrounds of the paintings, with a consensus among scholars of Catholic symbols that they represent the resurrection of Christ or, more generally, the resurrection of all men. This is a clear allusion to holometabolous development, where the caterpillar, the chrysalis and the butterfly were seen, respectively, as symbols for earthly life, death and resurrection (Cornwell & Cornwell, 2009, p. 120; Ferguson, 1989, p. 13; Impelluso, 2004, p. 330; Manguel, 2003, p. 167; Steffler, 2002, p. 33; Zöllner, 2005, pp. 28-29).

In looking at the painted devils with wings of butterflies in the triptych “The Last Judgement” by the fifteenth century Flemish painter Hans Memling, the objectives of this study are to identify the species used as models by Memling; to verify if biological features of these butterflies could have been considered in choosing them; to investigate representations of butterflies clearly used as positive icons in Flemish, German and Northern Italian paintings of the 15th and first half of 16th centuries; and record other possible cases where butterflies in this period were used as negative icons.

2 THE OBJECT OF STUDY AND ITS HISTORY

The focus of the present study is the three-part altar piece “The Last Judgment” of the Flemish, German-born, painter Hans Memling (ca. 1430-1494), exhibited at the Muzeum Narodowe, Gdansk, Poland. The large size triptych (ca. 3.06 x 2.24 m, opened) was probably finished between 1467 and 1471, being considered one of the masterpieces of the “Flemish primitive” (Michiels, 2007, p. 153). Commissioned by the Florentine agent Angelo Tani, who was working for the Medici Bank in Bruges, the city where Memling had his workshop, it
was intended to be sent to his native town. Tani was replaced in his post by his assistant and rival Tommaso Portinari in 1465, before his order has been concluded. Although Tani continued to be a partner in the Bruges branch of the bank, he returned to Bruges again only to liquidate his share in the firm in 1481. There are strong indications that Portinari took possession of the painting and promoted some changes before shipping it to Florence in April 25, 1473 (Lane, 1991, p. 632). On the second day of travel, along the south coast of England, the galley \textit{St Thomas} was seized by the famous corsair Paul Benedecke of the “Hanseatic League” and escorted to Gdansk, the city where the work still is today (Lane, 1991, p. 623; Michiels, 2007, p. 153). For many years, its authorship was controversial, but technical examination supports the traditional attribution to Memling (Lane, 1991, p. 623).

3 \textbf{GENERAL DESCRIPTION}

In the middle of the central panel, in the forefront, are represented Christ in heaven and St Michael the Archangel on earth as traditional to this subject, especially frequent in Western painting from the 12\textsuperscript{th} to the 15\textsuperscript{th} centuries (Giorgi, 2005, pp. 206-213; Michiels, 2007, pp. 170-181). The Archangel, in armor and luxurious mantle, weighing the souls of the dead, represented by a crowd of naked humans barely out of their graves, with a scale. With the help of angels and St Peter, positioned in the left panel, the blessed are conducted to the Gothic portal of heaven, after being dressed. In the interior right panel in turn, positioned to the left of the Archangel, is the Mouth of Hell in the form of a large pit emanating huge flames. The damned fall down all the way inside, naked, driven by demons wielding sharp, fiery instruments. The demons are variable in appearance but unanimously black, naked, tailed, and with feet inspired by those of birds of prey. In addition to this, a stylized bear tortures one of the sinners. Five demons invade the central panel. Human facial expressions are so varied and detailed that recent studies of aesthetic surgery were undertaken based on this painting (Jankau & Grzybiak, 2002). Two African men, one among the saved and the other among
the damned, stand out among the judged crowd in the central panel (Hahn, 2001, p. 5).

All the angels are conventionally winged, bearing typical bird wings. Several demons are also winged, with wings inspired by those of bats, a feature considered as a diabolical iconographic standard from the 14th century on (Link, 1998, p. 80). In such cases, they are positioned in the back, like in the angels, or as posterior expansions of the arms. In contrast, there are five demons with wings of insects, three inspired by butterflies. This condition is *sui generis*, not known in other depictions of demons of the period. Examining the butterflies’ wings more closely, two distinct coloration patterns can be distinguished, clearly referred to models found in nature. One of the insect “non-butterfly” wings sets was clearly based on that of a dragonfly and is positioned on the back. The other, on the buttocks of another demon, is diaphanous and very simple.

4 THE BUTTERFLIES REPRESENTED

The devil contending for a male soul with an angel in the central panel (Figure 1), behind St Michael the Archangel has orange wings on the back, reversed, with the dorsal surface directed ventrally. The anterior border of fore wing is black with three large black bands interspersed with yellowish areas, and the central area has three dark spots, one much larger than the others. The two other sets of wings are apparently different, but clearly portrayed from the two sides of a single butterfly model, positioned in the back of one of the demons (under side) and on the buttocks of another (upper side), both located on the interior right panel, very close to each other (Figure 2). These wings are dark brown, irregularly patterned. The fore wing has two transversal bands, a white discontinued and a red, very characteristic in shape, distinguished both dorsally and ventrally. The underside of the hind wing is also quite distinctive, with a pattern composed of rows of ocelli and light spots on the posterior border.
The two patterns described above correspond respectively to the nymphalidae *Aglais urticae* (L.), the small tortoiseshell, and *Vanessa atalanta* (L.), the red admiral, species widely distributed in the Northern Hemisphere (Lewis, 1987, pp. 1, 3, 210-211). Coincidentally, the larvae of both species feed mainly on leaves of *Urtica dioica* L. (nettle) (Gathmann *et al.*, 2006, p. 32; Lewis, 1987, pp. 210-211). They are black or very dark, very conspicuous on the green leaves. The adults of *V. atalanta* habitually feed on fluids derived from the decomposition of organic matter and is known to relish bird excreta, a very distinctive aspect among the European Lepidoptera (Sybil T, s. d.). When in land both tend to flap the wings slowly or keep them expanded, displaying their upper color pattern, a common behavior within this butterfly family, related with interactions between sexes, thermoregulation (Dennis, 2004) and probably aposematism (Hagen; Leinaas & Lampe, 2003).
5 DISCUSSION

5.1 Butterflies as positive icons

From the perspective of Catholic symbolism an association between butterflies and demons in the 15th and early 16th centuries in northern Europe may seem unsuitable. Generally, in the paintings of the period, an isolated butterfly in the background was used as a positive sign or icon, upholding the belief in the life after death or resurrection of Jesus Christ (Ferguson, 1989, p. 13; Hogue, 1987, p. 185), or as a badge of purity (Dicke, 2000, p. 231), mainly associated with
the Virgin Mary, but also some saints. A white butterfly with wings closed resting near the Virgin Mary was included in the following examples from the German school: “The Little Garden of Paradise” by an anonymous Frankfurter master, about 1410 (Städelisches Kunstinstitut, Frankfurt, Impelluso; 2004, p. 14); “Rest on the Flight into Egypt” by Lucas Cranach the Elder (1472-1553), 1504 (Staatliche Museen, Berlin; Michiels, 2007, p. 123); “Madonna with the Iris” associated with the workshop of Albrecht Dürer (1471-1528), between 1500 and 1510 (The National Gallery, London); “Holy Family in a Landscape” by Hans Baldung Grien (ca.1484-1545), ca. 1514 (Gemäldegalerie der Akademie der Bildenden Künste, Vienna; Impelluso, 2004, p. 162). Similarly, “St. Jerome Penitent” by Albrecht Dürer, ca. 1497 (The National Gallery, London) includes, in addition to a large lion, an iconographic attribute of this saint, a small white butterfly with closed wings, resting on the ground. Analogous examples in the Flemish school are a Madonna related to the workshop of Rogier van der Weyden (1400-1464), painted between 1470 and 1475 (Saint Louis Art Museum, St. Louis) (Dicke, 2000, p. 229), and also “The Rest on the Flight into Egypt” of Maerten van Heemskerck (1498-1574), ca. 1530 (National Gallery of Art, Washington, DC) (Hand & Wolff, 1986, pp. 111-117), including likewise a light butterfly, but with outspread wings, in the Child’s hand. Remarkably, all the above registered representations of butterflies were clearly inspired exclusively by cabbage whites and other pieridae.

Positive associations with butterflies are also recorded in the Northern Italian painting of the period. In the Pietà of Bartolomeo Montagna (1449/1450-1523), ca. 1500 (Santuario di Monte Berico, Vicenza), and also in the Vergine col bambino of Francesco di Gentile da Fabriano (op. ca. 1475-1515), s.d., (Musei Vaticani, Rome), there are representations perfectly compatible with the papilionid Iphiclides podalirius (L.), the scarce swallowtail. In those cases, the whitish butterfly is an unmistakable symbol of Christ’s resurrection. The few representations of the period in which angels bear butterfly wings were also painted in Northern Italy. In the frescoes of Andrea Mantegna (ca. 1431-1506) made in the Camera picta of Ducal Palace in Mantua, a scene in trompe-l’oeil includes nine tiny angels who work in
the pageantry of a commemorative plaque. While two of them have bird wings, following the standard iconography of the period (Giorgi, 2005), the seven others have butterfly’s wings on the back, not very realistic, but with distinct patterns inspired by nymphalidae, papilionidae and pieridae.

5.2 **Butterflies as negative icons**

The accuracy in the representation of wings of *Aglais urticae* and *Vanessa atalanta* in the panel by Memling implies that individuals of these species were observed carefully in nature or collected in order to serve as models. It is understood that their choice were not accidental and probably is related to their characteristic biology, allied with their easily distinctive color patterns, including dark ground colors. Detailed representation of insects in the 15th century, allowing them to be specifically identified, had already been recorded in Odonata (Carvalho, 2007).

Of all sins, lust is considered the most directly associated with the Devil (Link, 1998, p. 35). The association of the nettle, food plant of the two represented species, with lust and the flames of hell is immediate since practices of self-flagellation of Catholic monks and Saints, widespread for centuries from the Middle Ages, included rubbing the naked body in bushes of this plant to purge sexual desires (Vogüé, 2006, p. 17; Wheeler, s. d.). The practice of using the branches of stinging nettle *in natura* for self-flagellation was encouraged by the Church at the time (e.g. Taggard, 1986, p. 16), and continues to be a tradition in many countries around the world, including Brazil (e.g. Silva, 2003, pp. 200, 215).

Scholars of art history are unanimous in considering that Hans Memling, along with other less famous contemporary painting masters based in Bruges, was not an innovator. We can consider his art as a summing-up of the formulas of high quality established by Flemish painters of the preceding generation (Lassaigne, 1957, p. 133). This being the case, one would expect to find several other examples of such association of butterflies with sins or demons in the works of other painters of the 15th century, which is apparently very rare. It must be remembered that most of the early Catholic artistic production of that age in the Netherlands was lost over time, especially during the 16th century when there were several waves of revolt against
the Church, coming from the social crises associated with the Protestant Reformation and the Catholic Counter-Reformation (Lichtenstein, 2004, pp. 57-58, 65-66). The so-called "Iconoclastic Fury" (de Beeldenstorm) alone, promoted by Calvinist preachers between 1566 and 1567, wrecked about 400 churches in the Netherlands and one of the most important legacies of Catholic art ever produced (López, 2002, p. 45; Tanis, 1999, pp. 371-373). John Calvin himself severely condemned the excesses that were being committed with respect to Catholic art at that time (Lichtenstein, 2004, pp. 57-64). With the establishment of the Dutch Reformed Church, and the consequent development of new church traditions, later generations tend to lose connections with the arts in the religious context. The visual arts were not only secularized, but their didactic element became increasingly more literal, with the loss of both theological and artistic elements. It is no wonder that Dutch artists of the 17th century focused almost exclusively on landscapes and still lifes (Tanis, 1999, p. 373).

Maybe the one known additional case that can corroborate the possible practice of explicitly relating butterflies and demons in the iconography of the Netherlands, is that of the Flemish mannerist painter Frans Floris (1517-1570) in his work “The fall of rebel angels” of 1544 (Koninklijk Museum voor Schone Kunsten, Antwerp). One of the fallen angels, positioned in the foreground, shows a kind of loincloth on the buttocks formed by the wings of a butterfly with an unrealistic but distinct nymphalid pattern (Figure 3). Its head was deliberately based on a leopard, one of Devil’s Catholic icons for the Devil at the time (Impelluso, 2004, p. 220).

In the Flemish art in the 16th century or even a little earlier, demons were represented as being monsters made of different animal parts (including wings of insects), plants or unanimated objects, little distinguishable as such outside the context of the work. Numerous examples of such hybrid creatures can be found in paintings of Hieronymus Bosch (c. 1450-1516) (Ashenden, 2006, pp. 156-158; Eco, 2007, p. 102), considered as a kind of proto-surrealist painter, and Pieter Bruegel the Elder (1525-1569), as in his “The fall of the rebel angels” of 1562 (Musées Royaux des Beaux-Arts, Brussels) (Giorgi, 2005, p. 316).
In a few other works of art from the Late Middle Ages and early Renaissance *Aglais urticae* is also associated with strong elements of negative symbolism, mainly related to lust. In one of the most famous pages of the Breviary of Belleville (ca. 1323-1326, folio 24 v., vol. I) (*Bibliothèque Nationale de France*, Paris), a masterpiece of the Parisian illuminator Jean Pucelle, a monkey displays with one of his hands a butterfly with opened wings exhibiting the color pattern of this species, proportionally larger in the *bas-de-page* of the illuminated border. Apes and monkeys in the period were commonly associated with the sin of lust, and it was often said that the Devil often appeared under that form (Link, 1998, p. 76). Thus, the Devil was sometimes explicitly represented in the form of an ape or monkey (Ferguson, 1989, p. 11). In the central panel of the famous Hieronymus Bosch’s “The Garden of Earthly Delights” humanity is overwhelmed by sin, mainly that of lust (Bösing, 2010, pp. 51-60). Amongst erotic scenes, including representations of homosexual acts and acts of masturbation, a giant butterfly monster without posterior wings and with anterior pair
reversed exhibiting the pattern of *A. urticae* (Ashenden, 2006, pp. 156-157) is positioned in focus, almost in the center of that panel.

A plausible explanation for the positioning of wings inspired by those on *Vanessa atalanta* on the buttocks of a demon in the panel of Memling, something far from the standard iconography (Link, 1998, p. 80), would be due to the habit of this species of landing and feeding on liquids from feces and decaying organic matter. The above-mentioned painting of Frans Floris, made in the middle of the following century, serves to corroborate the existence of such standard iconographic symbolism related to the Devil in the Netherlands, which was probably lost with the massive destruction of works of art and with the restrictions imposed by Protestantism in the region. The explanation of Giorgi (2005, p. 238) for the presence of wings in the fallen angel in the Floris painting, the same as for the “The fall of the rebel angels” by Pieter Bruegel the Elder (*ibid.*, p. 316) – that is, referring to his past as an angel, is unsupported, since no examples are known in Flemish art of angels with butterfly wings, much less on the buttocks.

*Vanessa atalanta* became, in the 17th century, the most frequently represented insect in still lifes (Dicke, 2000, p. 231), especially those with floral motifs. In this strongly moralistic genre, its presence has a similar function to that of the fly, recalling the notion of transience of life and reminding the viewer of the imminence of death, even in the midst of visual beauty. In several paintings it is represented at the bottom, resting on some fallen debris from plant pots, or partially hidden, often with open wings. Examples of these associations can be seen in paintings of Balthasar van der Ast and Jan Olis (Dicke, 2000, pp. 228, 231), as well as in Adrien van der Spelt and Jan Brueghel the Elder (Schneider, 1994 pp. 16, 134), among others. The term *Vanessa* itself (from the Latin *vanitas* meaning vanity, with connotations of futility, frivolity and unreality), established in 1807 by Fabricius, may have been chosen due to the frequent association of that butterfly with this kind of painting (Dicke, 2000, p. 231). In the context of still lifes of the 17th century, the dark-colored butterflies of the genus *Vanessa* were used as part of the *vanitas* to contrast with the already well established symbolism (since the fifteenth century) of white but-

6 CONCLUSIONS

Although the observations of this study corroborate those of Dicke (2000, p. 231), he states that the differentiated symbolism between the nymphaid and pierid butterflies is essentially tied to their colors, dark and light, respectively, and that their opposition becomes explicit in the still lifes of the 17th century, with the changing of iconographic patterns coming from the reform of the Church in northern Europe. The present study, considering the “The Last Judgement” by Hans Memling and several other paintings of the 15th and early 16th centuries, indicates that a distinction between the patterns of nymphaids and pierids in the context of Catholic symbolism was already present in 15th century. The standardization of nymphaids as negative icons also appear to be related to consideration of biological knowledge of some common species stemming from empirical observation, such as how they land (open wings, connoting pride and debauchery), larval food plant (nettle, connoting lust and the fires of hell) and food items of adults (decomposing organic matter and liquid excrement, connoting death and putrefaction). Such pictorial records could be recognized in a more careful examination, bearing in mind the intense connection of Europeans and nature before the Industrial Revolution, combined with abundant, easy observation and discrimination of such species.

Coming from a predominantly visual culture consolidated and strengthened by the new experimental science and technology of the Renaissance, images from the Netherlands can be confirmed as a new and compelling record of knowledge of the world from the 16th century (Alpers, 1999, p. 38).

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