

THE IMPORTANCE OF SCIENTIFIC ANIMALISTIC IMAGES IN RUSSIAN ART OF THE XX CENTURY

Irina Portnova^{*1}

¹Department of Architecture & Civil Engineering People's Friendship University of Russia, Moscow, Russia

^{*}For correspondence; E-mail: irinaportnova@mail.ru

ABSTRACT: An article deals with a special area of graphics of the XX century - a scientific animalistic drawing, characterized by the property of sign. An ethological illustration representing the spectrum of behavioral movements of an animal is analyzed. This kind of images gives a vivid example of a symbolic, iconic interpretation. The origins of the scientific animalistic drawing are touched upon, it is noted that it was widely used and was particularly in demand during historical periods of scientific discoveries, the artistic structure of which requires close analysis. The article considers the importance of science in the Russian society of the XVIII-XX centuries, its influence on art, the role of scientific animalistic images of the XX century for the exhibits of biological museums in Moscow and the animalistic drawing in the scientific book. Thanks to the fruitful interaction of animal artists with biology scientists, their common understanding of the goals and tasks of creativity, the scientific illustration has acquired the qualities of an artistic image, without ceasing to meet scientific goals. From the sphere of a strict protocol drawing of the previous centuries ("kustkamera picture" of the XVIII century), it turned into a work of art with a set of its specific features. Reliance on the achievements of natural sciences, especially biology, scientific knowledge of the animal world, which were observed in the works of V. Vatagin, A. Komarov, V. Trofimov and other masters is one of the conditions of the animalistic art of the XX century. The uniqueness of this kind of art consisted both of scientific cognitive and aesthetic setting.

Keywords: scientific drawing; exhibits of biological museums; photography; scientist-biologist; nature

1. INTRODUCTION

In the beginning of the XX century, a scientific illustration, embodied in various forms of fine art: painting, drawing, sculpture, which illustrated famous scientific publications and was an organic part of the exhibits of biological museums; played a big role in the creative activity of animal artists.

Since the XVIII century, when the young science began to influence the creative work of artists in the development and the development of animalistic art, then the logical progressive process of scientific knowledge of nature and art was increasingly traced.

In this respect, a relevance of the topic is determined by a character of the animalistic image itself, which was sensitive to scientific tendencies in art, absorbed them, and formed under their influence. It became a kind of a demonstration of the regularity and expediency of the most natural world order. At the beginning of the XX century, a scientific animalistic image developed in the public and, above all, scientific environment, when attention was increasingly being drawn to the animal world and to wildlife in general. Specific qualities of this kind of images are determined. First of all, the scientific drawing "carries scientific information itself and not an artistic kind"[1], emphasized M. Kogan. To give a visual representation of an object in accordance with the scientific and educational idea is the primary task of a scientific image. Therefore, the function of a scientific drawing is descriptive and illustrative.

In other words, a scientific drawing can be regarded as a kind of document. The creator of a scientific image must eliminate a subjective moment as much as possible. His task is to explain properties of the material world, independent of an author's personality. The scientific image should have a unity of two requirements - external accuracy and scientific certainty. Such a pattern gives the appearance of an identical, adequate image of a model. In this connection, it is appropriate to compare the scientific drawing and the documentary photograph. They are close in their visual basis,

despite the fact that their techniques and techniques of work are different. A need for a documentary photograph, as well as for a scientific drawing, "is generated by a need to know exactly what an object looks like. Accordingly, the documentary photograph implements a certain installation of the photographer - installation to the ultimate objectivity of an image, to the maximum disconnection of any subjective refraction of the object" [2]. However, as M. Kogan correctly pointed out, "an image made by a hand cannot be documentary in the full sense of the word, it can create only an illusion of documentary" [3]. Only a photographic image comes close to reality, which accurately captures reality. There is a variety of literature on this issue. In general, these are works on general biology, zoology, and zoo-psychology. As for the scientific animalistic drawing, this aspect of the graphics has not always been subjected to the appropriate analysis. Foreign and domestic authors are willing to write about easel graphics, book illustrations, dividing accents on visual techniques, drawing techniques, introducing step-by-step instructions in the depiction of certain objects, etc. For example, considering a biological illustration, Phyllis Wood and Patric Mc Donnell [4] talk about it as an important means of visualization. Practical guidelines and recommendations for scientific illustration are given in the books: Frances W Zweifel, "A Handbook of Biological Illustration"[5], Elaine R. S. "Hodges The Guild Handbook of the Scientific Illustration"[6]. George V. Kelvin [7] talks about the requirements that an illustrator should master. One cannot disagree with Anson K. Cross [8], he argued that the study of nature is the most important art, without which it is impossible to imagine anything and even more to express. This provision is directly related to biological illustration. Studies of domestic authors [9] concerned the most educational process. They wrote about the importance of drawing, as the basis of all creativity, called the historical methods of teaching the drawing, the basis for building a new one.

Animalistic illustrations were discussed by the animal artists themselves, for example, V.A. Vatagin [10] and researchers - Yu.M. Smirin [11].

2. METHODS

As you can see, some aspects of the study of graphic art took place. Scientific animalistic drawing, which has become a significant area in Russian art, nevertheless, among critics and theorists, did not find proper sanctification. In this article, we will focus more specifically on the specificity of the scientific animalistic drawing, which has specific qualities, namely, "sign". Here, the problem of the correlation of scientific and artistic features takes place, which is solved with the help of an analytical method, namely historical and artistic analysis.

3. RESULTS AND DISCUSSION

The symbol in art - is the integrity of the idea, realized in some basic, trunk line of design. To reveal in an infinite variety of textures the integral imagery of the symbol, to make both color, and light, and stone and wood become an element of a single expressiveness, only could the authors of great artistic values in the history of mankind make possible. We will see a special order of symbols in such an original area of graphics as a scientific drawing. Here, the sign is not the same as in classical works of art, because the scientific drawing carries information of a scientific, rather than an artistic kind. As noted above, the specificity of the sign in the scientific drawing is to give a visual representation of the object in accordance with the scientific and educational idea. The task of the illustrator is to explain the properties of the world, independent of the author's personality. Already in the "kunstkamera" picture of the XVIII century, which reproduced with great care the collections of the museum, these traits are traced. "The drawing principle was based on the full-scale image principle. Animals and birds had to be sketched in such a way that the features of their structure and species could be clearly seen. In addition, the artist had to sketch in such a way that the most accurate and definite representation can be made about their true value [12]." At that time, in the botanical, zoological, geographical, and ethnographic publications, the scientific drawing performed the main explanatory function. It's appearance and properties of the image were due to the peculiarities of the development of science of that era - metaphysical, descriptive, occupied with the accumulation of facts. In the first half of the XX century, the requirements for a scientific illustration, its difference from an artistic image, were formed for the first time. Unlike scientific images in the books of the XVIII century, sometimes sinning with insufficient knowledge and understanding of the depicted, the drawing of the XIX century was distinguished by a great desire to convey the objective properties of the model. An in-depth study of reality led to a more accurate, documentary-meaningful image of it. In the process of comprehension, the subjects were identified as the most significant, they were synthesized, and their cause-and-effect relations were established. Thus, a holistic behavioral picture of vital activity was traced. It was not possible to rely on tradition everywhere. For example, in Russia, there was not much experience in

creating visual tables. Therefore, Russian artists focused on the work of Western European animalists of the XIX century, where animals were depicted with a lot of detail and thoroughness. English masters: G. Stubbs - the author of anatomical tables of animals and birds, R. Ward who was noted for his ability to accurately represent cows and horses, E. Landseer and the German V. Kunert presented complete romantic pathos of the scene depicting deer, lions and other animals. Of Russian masters in this field, as a rule, not enough professional artists worked. Similar to the foreign artists on the subject tables, their works were aesthetically not attractive and boring. Only some of them: G. Leitman's zoological tables met the requirements of a good visual aid. Among the Russian artists of the XX century, V.A. Vatagin was one of the first who achieved in the area of scientific drawings, a high European level of professional skill. For many years (from 1907 to 1948) he worked on the creation of scientific and visual artefacts for the State Darwin Museum in Moscow. The idea of the extensive use of art exhibits for biological museums was new not only in Russia but throughout Europe. At the first stages of activity, Vatagin began this work alone. As the museum funds grew, and the concept deepened and expanded, the question arose about the new staff of artists. In the 1920s, along with V. Vatagin, the animal artists began to work in the museum: K. Flerov, V. Trofimov, D. Gorlov, N. Kondakov A. Komarov, N. Komarov.

By the beginning of the XX century, a certain canonical system developed in the depiction of animals, implying rigor in the depiction of figures, a certain order of their arrangement. There are ethograms, representing a graphic description of the elements of behavior, reminiscent of the film's footage. Later, in scientific ethological studies of animal behavior, they began to be widely used along with filming, tape recordings. This kind of scientific drawing is in some way similar to the activities of the artist-animator, creating hundreds of sketches of successive movements of his hero. In addition, ethogram drawing - is not just an illustrative list of behavioral steps characteristic for a species. As is known, in each phenomenon, the subject includes a plurality of actions, sides, faces, and states. If in a simple subject only visual similarity can be traced, then in the complex one - a labyrinth of meanings can be found. The problem of behavior is one of the deepest, most difficult problems of cognition. The Dutch scientist N. Tinbergen said: "Nothing in nature is anything more complicated than behavior. If life is the most complex form of existence of matter, the behavior is the most complex manifestation of life activity"[13]. To find this not known and make it explicit is the task that confronts the artist creating a scientific drawing. On the one hand, to find the unknown is the ability to reveal the characteristic ritual poses in a variety of movements of the animal, on the other hand, to fix them as accurately as possible and more intact. Only in this equilibrium is it possible to comprehend the meaning of the ritual, its symbolism. There will certainly be an acute perception of nature, and postures will acquire a symbolic character, corresponding to their sign in real life. Figures by V. Vatagin, V. Trofimov, A. Laptev, A. Belashov, and other masters are an excellent example of this. (Fig. 1, 2, 3).



Fig. 1. V. A. Vatagin. Parrots.



Fig. 2. V.A.Vatagin. Communication of foxes.

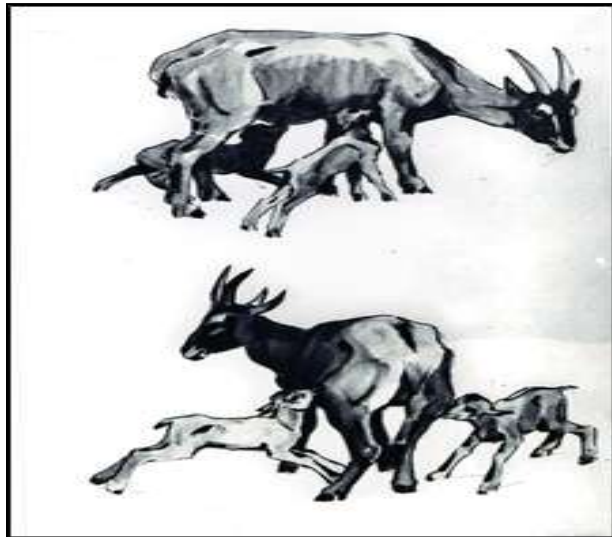


Fig. 3. V.A.Vatagin. Tour mother and a baby

One can single out V.Vatagin's drawings depicting the poses and mimic expressions of chimpanzees, which are kept in the State Darwin Museum in Moscow: "Ionia chimpanzee's

expression of sadness and excitement", " Ionia chimpanzee's various face expressions and postures", "The reaction of the chimpanzee to the scarecrow of the Magpies" (1913-15, color pencil, ink, SDM) and others (Fig. 4, 5, 6).



Fig. 4. V. A. Vatagin. Chimpanzee Ioni

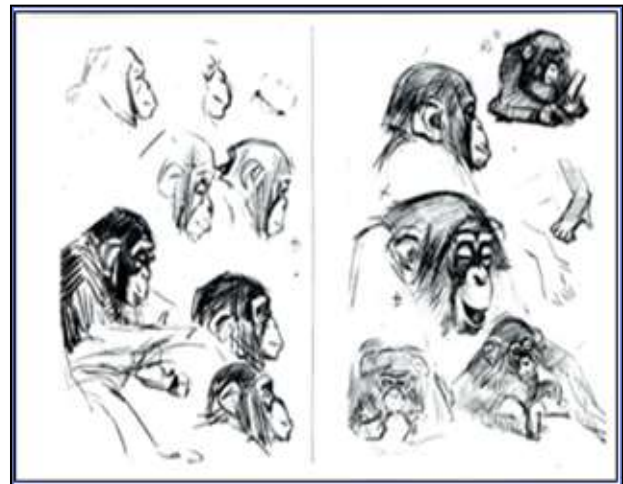


Fig. 5 V. A. Vatagin. Chimpanzee Ioni. Outline of goals and expression of faces chimpanzee



Fig. 6. V. A. Vatagin. Ioni chimpanzees in different poses

Natural drawings, representing a variety of sketches and sketches laconically and vividly portrayed, with several lines, strokes, and contour outlines reflect the sign of the symbol of this, or that emotional state, which was unusual for a scientific illustration in its traditional sense. However, it is possible to directly and vividly reflect the behavioral traits of animals and birds in them. The graphic design of the drawings, which is very different from the conventional methods of scientific imaging, fully utilized the skills of fast natural drawings in zoos. The acute perception of nature and the ability to "see" was revealed.

There is no literal, detailed transfer of details in works. On the contrary, just a few lines quickly and accurately capture the main, characteristic. This skill of the

artist A.F. Kots compared with A.P. Chekhov, seeing kinship in the expression in them "the breadth of the search for images and the conciseness of their detection"[14].

And yet, for the sketch that was unusual for the scientific drawing, there was a research approach, since they served scientific purposes. Drawings taken from a certain angle, respectively, have a benefit for science, because they contain an "ethological" interpretation. It is also a rich material for studying the behavior of animals, used for the analysis of the emotional sphere of animals in the field of descriptive ethology, and in particular, the application of the method of ethogram analysis - transmission of type-specific behavioral acts.

Problems of book scientific illustration of animal artists are also inseparable from their scientific and artistic activities.

The scientific illustration was created along with manuals for educational institutions, picturesque, sculptural, graphic works for the museum. In Russia, there was no stable tradition of scientific animalistic illustration in books. Dry, anatomical drawings of animals and abstract schemes flooded the scientific literature of the late XIX - early XX centuries. Only reproductions from paintings and engravings of foreign artists of the XIX century brought a certain variety.

A school of animal artists, established at the beginning of the XX century on the initiative of A. Kots and V. Vatagin within the walls of the Darwin Museum, and along with the development of a scientific and artistic exhibit, played a major role in the creation of a national book of scientific illustration. Together with photography, various kinds of schemes, an animalistic drawing in books, now a significant, sometimes predominant place is given. Participating in the organization of the book sheet and the composition of the entire book, numerous and varied drawings serve as an excellent addition to the scientific text. Sketches, or sketches depicting animals, fully met the requirements of scientific illustration. Animals depicted from life, and most importantly with accurate transmission of all their behavioral movements, did not contradict the essence of the scientific narrative, and diversified the nature of scientific graphics.

A large number of illustrations, which came to the scientific and popular science book at the beginning of the XX century, are explained not only by the defining role of the group of artists who were brought up within the walls of the Darwin Museum, but also by the general process of the humanization of the sciences. The wide popularization of scientific

knowledge among the masses affected many aspects of human activity, and oriented them to the accessibility of perception and understanding. An animated drawing, directly executed by the hand of the artist, acquired a great attraction and possibility of influencing the viewer, rather than the art of photography, which was young at the beginning of the XX century. Hence the specificity of this branch of scientific graphics flows, not alien to the creative approach.

4. CONCLUSION

In general, the appearance of a scientific drawing was dictated not only by the needs of an increased science but also by the high professional level of animalistic graphics. The scientific figure continues to arouse interest. This area of graphics in the national art history has not yet been fully appreciated. It was more related to biological disciplines, and meanwhile, the illustrative material of animal artists demonstrates an interesting side, representing a scientific and iconic image in a sign aspect. Even if we take a specific area of the ritual behavior of animals we are considering, one cannot ignore the proximity to human behavior:

As noted by S. F. Denisov and L. V. Denisov [15], "Demonstrations subsequently served as a genetic analogue of cultures in humans, the basis on which the diversity of human cultural systems grows". The scientific-cognitive function, which requires additional descriptive-illustrative explanations, appears here as a methodically pre-defined model. Nevertheless, in spite of the fact that the scientific illustration is closely dependent on the tasks of science, it fulfils its aesthetically significant and ethical-educational functions. Biological themes that reveal the life of animals in their various manifestations, in themselves, gave interesting material. The possibility of translating it into visual series for training courses and illustrating scientific and popular science books led to an original fusion of scientific and artistic tasks. In this connection, it should be said that the scientific and visual works of animal artists also had a fruitful impact on the development of all animalistic art. And today, at an epoch when scientists and philosophers speak, a new "picture of the world" is being created, a form of transfer of scientific knowledge is needed, which, without distorting scientific truth itself, can make this truth accessible, evident.

5. REFERENCE

- [1] Kogan. Aesthetics and artistic photography // Soviet photo No. [6]. M., (1968), p.29. Available online at :. http://platona.net/load/knigi_po_filosofii/ehstetika/kagan_ehstetika_kak_filosofskaja_nauka/34-1-0-3013
- [2] M. Kogan. Aesthetics and artistic photography // Soviet photo No. 3. M., (1968), p.29. Available online at:. http://platona.net/load/knigi_po_filosofii/ehstetika/kagan_ehstetika_kak_filosofskaja_nauka/34-1-0-3013
- [3] M. Kogan. Place of artistic photography in a number of fine arts // Soviet photo. (1968) No. 7, p.22. Available online at :. http://platona.net/load/knigi_po_filosofii/ehstetika/kagan_ehstetika_kak_filosofskaja_nauka/34-1-0-3013
- [4] Phyllis Wood and Patric Mc Donnel Scientific: A Guide to Biological, Zoological, and Medical Rendering

- Techniques, Design, Printing, and Display John Wiley Sons, (1994), 158 p.
- [5] Frances W Zweifel. A Handbook of the Biological Illustration of the University of Chicago Press, (2007), 152 p.
- [6] Elaine R. S. Hodges. The Guild Handbook of the Scientific Illustration John Wiley Sons, 2003, 656 p.
- [7] Kelvin V. Illustrating for Science: "A Problem-Solving Approach to Rendering Subjects in Biology, Chemistry, Physics, Astronomy, Space Technology, Medicine, Geology and Architecture." Crown Publishing Group, (1992), 192 p.
- [8] Anson K. Cross. Free-Hand Drawing: "A Manual for Teachers Students" eKitap Projesi, (2015), 163 p.
- [9] Rostovtsev, N.N. Academic drawing. Moscow: Education, (1995)., 239 p., p. 33. Available online at : <http://static.my-shop.ru/product/pdf/154/1533328.pdf>
- [10] Vatagin, V.A. Memories. Notes of the animalist. (1980) Soviet artist. 210 p. Available online at: <https://www.ozon.ru/context/detail/id/3885130/>
- [11] Smirin Yu.M. Animalistic art as a method of zoological research: achievements and problems // Bulletin of the Moscow Society of Naturalists, vol. 104, ed. Moscow Society of Naturalists, (1999). - C.50-52, 75 c. Available online at : <https://www.twirpx.com/file/858914/>
- [12] Stankevich T.V. The Kunstkamera of St. Petersburg Academy of Sciences. - M-L ;, Publishing house of the USSR Academy of Sciences, (1953).- p.74, 240 p. Available online at : http://kunstkamera.ru/lib/rubrikator/08/08_02/stanukovich_kunstkamera/
- [13] Tinbergen N. Behavior of animals. M., Publisher AST, (1969), p. 7. 190 p. Available online at : http://www.studmed.ru/tinbergen-n-povedenie-zhivotnyh_94a35628dcc.html
- [14] Animalism in light of Darvin and Goethe. Report at artists' meeting in the MOSH Club on Febuary 19, 1946 // GDM. Archive of A. F. Kotsa. No. 10141. Vol.5, L.370.
- [15] Denisov S. F. Denisova L. V. Human and animal in man. Omsk, OmGPU Publishing House, (1995). - P. 8, 189 p. Available online at : <http://biblus.ru/Default.aspx?book=8q2q0a46a3>