

Veterinary Illustration: Science and Art Telling a Story Together

Ilustracija v veterini: Znanost in Umetnost skupaj pripovedujeta zgodbo

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At first glance, *Science* and *Art* seem to be very different, as *Science* is supposed to be objective and guided by data, while *Art* is subjective and strongly influenced by feelings and opinions. While the results of *Science* and *Art* are quite different, both processes have undeniable similarities. Both put ideas about the world into a form that allows the viewer to connect with the idea. Observing a cell, a snake, or human nature is what natural sciences and art depend on, albeit for different purposes. Veterinary and medical illustrations capture visual representations of the animal or human body or individual parts for documentation purposes, for teaching, or for veterinary/medical practice. They are closely related to historical, social, and technological developments that have influenced and have been influenced by the content of illustrations, the artists themselves, and the techniques used to produce, reproduce, and disseminate them from prehistoric and historical times to the present.

Since prehistoric times, people have illustrated the natural world through art. The extensive collection of Paleolithic cave paintings found around the world testifies to this deeply rooted habit. One of the best-preserved examples, which I would like to point out because I was fascinated by them last year in Marseille, France, are the Paleolithic depictions of nature and animals, dated between 33,000 to 30,000 years ago. They were discovered in 1985 by Henri Cosqueri, a professional diver in Parc National les Canaques. Since the entrance to the Cosquer Cave is now below sea level,

Na prvi pogled se zdi, da sta si *Znanost* in *Umetnost* zelo raznoliki, saj naj bi bila *Znanost* objektivne narave ter podprta z pridobljenimi rezultati, medtem ko naj bi bila *Umetnost* bolj subjektivne narave ter močno pod vplivom občutkov in mnenj. Medtem, ko so rezultati, ki jih prinašata *Znanost* in *Umetnost* precej različni, sta hkrati po drugi strani obe zelo podobni, saj predstavita svoje ideje na način, da se opazovalec z njimi poveže. *Znanost* in *Umetnost* temeljita na opazovanju, bodisi celice, kače ali človeške narave, pa čeprav z različnim namenom. Veterinarske in medicinske ilustracije so bistvenega pomena za vizualno predstavljane zgradbe živalskega ter človeškega telesa oz. njegovih posameznih delov za namene dokumentiranja, poučevanja ali za name-ne veterinarske medicine/medicine v praksi. Tesno so povezane z zgodovinskim, družbenim in tehnološkim razvojem, na katerega je vplivala vsebina ilustracij, umetniki sami in tehnike, ki so jih uporabili za njihovo izdelavo, reprodukcijo in širjenje od prazgodovine do danes.

Že od prazgodovine naprej so ljudje skozi oči umetnosti upodabljali naravni svet. O tej globoko zakoreninjeni navadi priča obsežna zbirka paleolitskih jamskih slikarij, najdenih po vsem svetu. Eden najbolje ohranjenih primerkov, ki bi jih želela izpostaviti, ker so me lani navdušili v Marseillu v Franciji, so paleolitske upodobitve narave in živali, ki segajo v obdobje med 33,000 do 30,000 let pred našim štetjem. Leta 1985 jih je med potapljanjem odkril Henri Cosqueri v nacionalnem parku les Canaques. Ker je vhod v jamo

the images are very well preserved. Today we can all share this great experience by exploring the ancient art in the artificial cave in the Villa Mediteranea at the port of Marseille.

Throughout history, various forms of visual media have played an important role in communicating and explaining scientific concepts. The use of illustrations and other visual methods to convey scientific information is called scientific illustration. The main purpose of scientific illustration is to help the target audience better understand scientific concepts, whether they are researchers, students, or the general public. Therefore, scientific illustration is an important aspect of science communication at all levels. It tells a story. The distinctive feature of scientific illustration is the demand for accuracy and objectivity in presenting the concept as much as possible. A scientific illustration is certainly a form of an art, but art with the specific goal of communicating science.

Veterinary science illustrations are valuable visual representations for student and client education, publications, teaching, presentations, and many other purposes. Artists collaborate in all areas, whether illustrating histology textbooks, creating prosthetics, or designing artwork for pharmaceutical companies. Collaboration is key; researchers and clinicians, from veterinary to human medicine, microbiology, and pharmaceutical sciences, work with artists. Science is a language, and veterinary and medical illustrators translate that language for a wide audience using a visual language. Veterinary professionals can use veterinary science illustration to communicate complex and important information in clearly and concisely, in a way that is easy to understand. For example, illustrations can be used to show an animal's internal structures, such as its organs and bones, which can be difficult to visualize from the outside. They can also be used to demonstrate the progression of a disease or injury, helping clients understand what is happening to their animals and what treatment options are available. In addition, illustrations can be used to help veterinarians plan surgical procedures, by providing a detailed look at the anatomy of the affected area. They can also be used to document the progress of a treatment or procedure, allowing for more accurate tracking of changes over time.

Today, there are careers in veterinary or human medical illustration that combine scientific knowledge with artistic skill. A medical illustrator is a professional artist with advanced training in both life sciences and visual communication, who translates complex information into visual images, often in collaboration with scientists, physicians, veterinarians, and other experts. However, medical illustration is a small field in which there are not many trained professionals worldwide. Therefore, collaboration with artists and illustrators who share the same interest in this field is of great importance.

Cosquer pod morsko gladino, so slike zelo dobro ohranjene. Danes lahko vsi delimo to veliko izkušnjo z raziskovanjem starodavne umetnosti v umetno ustvarjeni jami v vili Mediteranea v pristanišču Marseilla.

Skozi zgodovino so imele različne oblike vizualnih medijev pomembno vlogo pri sporočanju in razlagi znanstvenih konceptov. Znanstvena ilustracija se nanaša na uporabo ilustracij in drugih vizualnih načinov z namenom posredovanja znanstvenih informacij različnim javnostim. Njen glavni namen je pomagati ciljnemu občinstvu bolje razumeti znanstvene koncepte, ne glede na to, ali so raziskovalci, študenti ali splošna javnost. Zato je znanstvena ilustracija pomembna na vseh ravneh v komunikaciji znanosti, saj pripoveduje njeno zgodbo. Posebnost znanstvene ilustracije je čim večja natančnost in objektivnost pri predstavitvi zamisli. Znanstvena ilustracija je vsekakor oblika umetnosti, vendar umetnosti s posebnim ciljem komuniciranja znanosti.

Veterinarske znanstvene ilustracije so dragoceni vizualni pripomočki za izobraževanje študentov in strank, pripravo raznovrstnih publikacij, poučevanje, predstavitve in številne druge namene. Umetniki lahko sodelujejo z veterinarsko stroko na vseh področjih, bodisi pri ilustriranju histoloških učbenikov, ustvarjanju protetičnih pripomočkov ali pri oblikovanju umetniških del za farmacevtska podjetja. Sodelovanje je pri tem ključnega pomena; med raziskovalci in kliniki, od veterinarske do humane medicine, mikrobiologije in farmacevtskih ved. Vsem je skupno sodelovanje z umetniki. Znanost je jezik, ki ga ilustratorji na področju veterinarske medicine in medicine prevajajo v za širše občinstvo razumljiv jezik in pri tem uporabijo svoj vizualni jezik. Veterinarski strokovnjaki lahko uporabljajo ilustracije s področja veterinarske znanosti za sporočanje zapletenih in pomembnih informacij na jasn in jedrnat način, ki omogoča lažje razumevanje vsebine. Ilustracije lahko na primer uporabimo za prikaz notranjih struktur živali, kot so njeni organi in kosti, ki si jih je od zunaj težko predstavljati. Uporabijo se lahko tudi za prikaz napredovanja bolezni ali poškodbe, kar strankam pomaga razumeti, kaj se dogaja z njihovimi živalmi in kakšne možnosti zdravljenja so na voljo. Poleg tega so lahko ilustracije uporabne za pomoč veterinarjem pri načrtovanju kirurških posegov, tako, da jim omogočijo podrobnejši vpogled v anatomijo prizadetega območja. Uporabljajo se lahko tudi za dokumentiranje napredka zdravljenja ali postopka, kar omogoča natančnejše sledenje spremembam skozi čas.

Danes celo obstajajo na področju veterinarske ali humane medicinske ilustracije poklici, ki združujejo oboje - določeno znanstveno znanje in umetniške spretnosti. Eden od takšnih je poklic medicinskega (znanstvenega) ilustratorja, ki je poklicni umetnik z daljšim usposabljanjem na področju znanosti in vizualne komunikacije, ki interpretira kompleksne informacije znanosti v vizualne podobe, pogosto v sodelovanju z znanstveniki, zdravniki, veterinarji in drugimi strokovnjaki. Vendar je medicinska (znanstvena) ilustracija

With this issue, in the light of *Science* and *Art* we welcome our first artistic collaboration with renewed artist Pšenica Kovačič, who has been working with the Veterinary faculty in Ljubljana for some time, enabling various researchers and academics to tell their stories to clients, students, and the scientific audience. She will be part of our team as an Art editor, designing and producing visual content such as illustrations for the cover of the journal and helping us communicate our stories to a wider audience.

This year's first issue contains four interesting and various peer-reviewed articles, a review article on alternatives to rectal temperature measurement in rats, two original scientific articles, on the hematological profile of the Posavje horse breed and on the influence of diet on oxidative stress parameters in cats and a case report on magnetic imaging of the crested porcupine.

Since the Posavje horse is an autochthonous "cold-blooded" horse typical of the southeastern part of Slovenia and Croatia, it was an easy decision to feature it on the first illustrated cover of the Slovenian Veterinary Research journal. The breed originated from unintentional crosses with various horse breeds, especially Belgian cold-blooded horses. It was selected mainly for heavy draft work, especially in steep forest areas. Today these horses are the smallest coldblooded breed in Europe and their pedigree was introduced in 1993. This breed is characterized by a small, thin head, a straight profile, a medium-length neck with a short back, and a short, very broad, and moderately restrained lower back. They have relatively large and strong hooves. The legs are covered with a protective coat. They have a robust constitution, are very fertile and their sexual dimorphism is pronounced. The breed is known to be good-natured and peaceful.

I would like to thank our new Editor-in-Chief Dr. Klementina Fon Tacer for inviting me to write this Editorial and for paving the way to combine *Art* and *Science* in the field of veterinary illustration in our journal. During the preparation of this Editorial, a lot of material and ideas were collected on this topic, so there will be more to report in one of the future issues of the Journal.

I would like to conclude with a quote from American surgeon and medical illustrator Frank H. Netter.

"Draw what can't be seen, watch what's never been done, and tell thousands about it without saying a word." Frank H. Netter, M.D.

zelo specifično in ne preveč razširjeno področje ustvarjanja, z le nekaj izobraženimi strokovnjaki po vsem svetu. Zato je zelo pomembno sodelovanje z umetniki in ilustratorji, ki jih to področje zanima.

V prvi letošnji številki v luči *Znanosti* in *Umetnosti* pozdravljamo naše prvo umetniško sodelovanje s priznano umetnico Pšenico Kovačič, ki že nekaj časa sodeluje z Veterinarsko fakulteto v Ljubljani in omogoča večim raziskovalcem in akademikom, da pripovedujejo svoje zgodbe naročnikom, študentom, kakor tudi znanstvenem občinstvu. Postala je del naše uredniške ekipe kot umetniška urednica, ki bo oblikovala in pripravljala vizualne vsebine, kot so ilustracije za naslovnico revije, ter nam pomagala posredovati naše zgodbe širšemu občinstvu.

Letošnja prva številka vsebuje štiri zanimive in raznolike recenzirane članke, in sicer pregledni članek o alternativah rektalnemu merjenju temperature pri podganah, dva originalna znanstvena članka o hematološkem profilu avtohtone slovenske pasme posavskega konja oz. posavca in vplivu prehrane na parametre oksidativnega stresa pri mačkah ter študijo primera o magnetnem slikanju afriškega ježevca.

Ker je posavski konj kot avtohtoni »hladnokrvni« konj, značilen za jugovzhodni del Slovenije in Hrvaške, je bila odločitev, da prav to pasmo upodobimo na prvi ilustrirani naslovnici revije Slovenskega Veterinarskega Zbornika, hitro sprejeta. Pasma je nastala z naključnimi križanji različnih pasmah konj, predvsem belgijskimi hladnokrvnimi konji. Selektioniran pa je bil zlasti za težka vlečna dela, predvsem v strmih gozdnih predelih. Danes pasma velja za najmanjšo hladnokrvno pasmo konj v Evropi. Rodovnik so uvedli leta 1993. Za pasmo je značilna majhna, tanka glava, z ravnim profilom, srednje dolgim vratom, kratkim hrbtom ter kratkim, zelo širokim in zmerno omejenim spodnjim delom hrbta. Njihova kopita so relativno velika in močna. Noge so pokrite z zaščitno dlako. Imajo robustno konstitucijo, so zelo plodni in imajo izrazit spolni dimorfizem. Pasma je znana kot dobrodušna in miroljubna.

Naši novi glavni urednici dr. Klementini Fon Tacer se zahvaljujem za povabilo k pisanju tega uvodnika in za tlakovanje poti združevanja *Umetnosti* in *Znanosti* na področju veterinarske ilustracije v naši reviji. Med pripravo uvodnika se je nabralo veliko gradiva in idej na to tematiko, zato bo sledilo podrobnejše nadaljevanje v eni od prihodnjih števil revije.

Zaključujem pa s citatom ameriškega kirurga in medicinskega ilustratorja Franka H. Netterja.

"Rišite, česar se ne vidi, glejte, kar še ni bilo narejeno, in na tisočim povejte o tem, ne da bi rekli besedo." Dr. Frank H. Netter