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A plea for extension of the official nomenclature of the microscopic structure of human tissues and organs, the *Terminologia Histologica*

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Background: *At first sight, the issue of terminology in morphological sciences may seem as "closed and changeless chapter", as many of the structures within the human body have been known for centuries. However, the exact opposite is true. Terminologia Histologica: International Terms for Human Cytology and Histology published under the Federative International Programme on Anatomical Terminology in 2008 is a new standard in human cell and tissue terminology. The list of items in the first and still valid official nomenclature of cellular and tissue structures, the Terminologia Histologica (TH), is the best and most extensive of all the histological nomenclatures ever issued.*

Materials and methods: *The aim of this article is a systematic and in-depth analysis of the current internationally accepted nomenclature TH, with focus on important histological structures which are missing in this first edition. Some should be incorporated just for the sake of completeness and consistence, others are purely absent terms for individual structures or some are recently described new tissue structures.*

Results: *We also discuss about a question, how to deal with the issue of eponyms. Eponyms reflect medicine's rich and colourful history. Although they have not been considered official terms in the anatomical nomenclature since 1955, they are still widely used in clinical practice.*

Conclusions: *We hope that this opinion article will develop a wide scientific discussion before the publication of the second edition, so perhaps the mentioned minor flaws will be corrected, so the new edition of the TH will become truly an internationally accepted communication tool for all histologists, histopathologists and anatomists.* (Folia Morphol 2020; 79, 3: 610–620)

Key words: histology, histopathology, terminology, nomenclature, *Terminologia Histologica*

INTRODUCTION

At first sight, the issue of terminology in morphological sciences may seem as "closed and changeless chapter", as many of the structures within the human body have been known for centuries. However, the exact opposite is true. The gross anatomy has an incomparably longer history than the microscopic anatomy and despite of the anatomical terminology has been a matter of great controversies and disagreements until now [7, 8]. The same anatomical structures were

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differently named, described, and defined by different authors from different countries and centuries [54]. Therefore, many attempts have been made over the centuries in order to establish a general nomenclature that would be acceptable to all morphologists throughout the world. However, most of the current publications dealing with the issues of terminology are focused on gross anatomy [e.g., 7, 8, 24–30, 33, 42, 43, 68], histological and embryological terminologies are discussed to a much lesser extent [59, 61, 62, 65].

Terminologia Histologica: International Terms for Human Cytology and Histology [13] is a new standard in human cell and tissue terminology. The list of items in the first and still valid official nomenclature of cellular and tissue structures, the *Terminologia Histologica* (TH), is the best and most extensive of all the histological nomenclatures ever issued. The aim of this article is a systematic and in-depth analysis of the current internationally accepted nomenclature TH, with focus on important histological structures which are missing in this first edition. Some should be incorporated just for the sake of completeness and consistence; others are purely absent terms for individual structures. The part concerning the central and peripheral nervous systems as well as the sensory organs has been already ameliorated and extended within the *Terminologia Neuroanatomica* in 2017, which adopted and refined all the histological terms related to these three chapters [14] and merged them with the anatomical ones. The way how these missing terms concerning the nervous system and senses were incorporated to the official nomenclature was similar to our proposal. These missing terms were first time published as an article in *Folia Morhologica* journal [26].

We have not attempted to criticise the first edition of the TH. We deeply appreciate the endeavour of the team of experts working under the auspices of the Federative International Programme for Anatomical Terminology (FIPAT). We hope that this opinion article will develop a wide scientific discussion before the publication of the second edition, so perhaps the mentioned minor flaws will be corrected, so the new edition of the TH will become truly an internationally accepted communication tool for all histologists, histopathologists and cell biologists.

MATERIALS AND METHODS

A systematic and in-depth analysis of the current internationally accepted nomenclature "*Terminologia Histologica*: International Terms for Human Cytology and Histology" [13]. The analysis was focused on finding of missing terms of tissue structures which may be important for experts in different fields of human medicine, or missing synonymic terms which are more often used in every day communication among morphologists. Our proposals for missing terms in the first edition of TH are highlighted in bold. We also discuss the significances of our findings for every-day praxis, for scientists, clinicians, as well as for university teachers.

RESULTS AND DISSCUSION

Extension proposal for chapter *Connective and supporting tissue*

Globulus osseus is a mass of osseous tissue occurring in the cartilage matrix, which has undergone calcification. It can be found as islands in the intrachondral bone, particularly in the patches within the middle layer of the *capsula otica* of the developing ear.

Telocyte (***telocytus***) — telocytes, cells with very long cytoplasmic projections named telopodes, are "controversial" interstitial cells discovered only 13 years ago [47]. To this date, they have been described in almost all organs of the human body. As of August 2019, more than 350 articles are being displayed in MEDLINE/PubMed after "telocyte" are searched for. Even though telocytes are not widely accepted by all scientists as an individual and morphologically and functionally distinct cell population [64], several articles regarding telocytes have already been published in several prestigious morphological journals. The telocyte diversity extends beyond their morphology and functions, as they have a potential role in the etiopathogenesis of different diseases, "telocytopathies" [66] and play an important role in tissue homeostasis maintenance, intercellular signalling, tissue regeneration/repair and angiogenesis [6, 23, 41, 71]. From the histological point of view, at present, there is no singular way of distinguishing telocytes as a cell type by expression of a single protein. However, the most commonly used markers are c-kit (Fig. 1), CD34, vimentin, platelet-derived growth factor receptor alfa and alfa-smooth muscle actin. Additionally, expression of these molecular markers varies significantly across different type of tissues and organs that means telocytes are a heterogeneous population expressing different combinations of markers [32]. In electron microscopic research, their long cytoplasmic prolongations may be easily confused with blood and lymphatic endothelial cells, prelymphatic endothelial

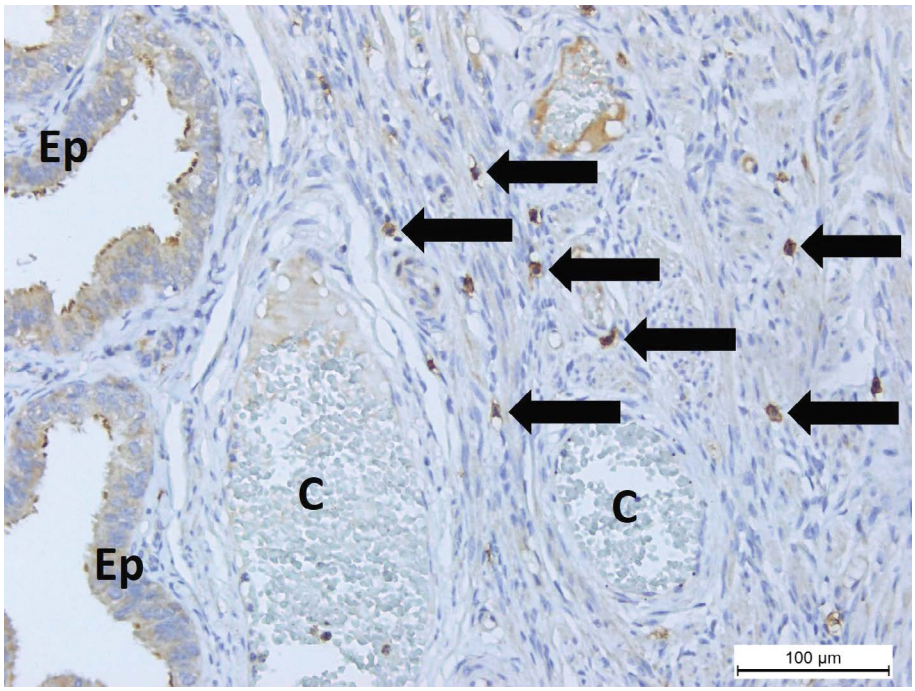

Figure 1. C-kit positive telocyte-like cells (brown colour, marked with arrows) in the muscle layer of uterine tube (anti-c-kit antibodies, diaminobenzidine as brown chromogen was used for visualisation); Ep — epithelium of uterine tube, C — capillaries filled with blood cells.

cells or pericytes [50, 58, 64]. Despite the controversy surrounding telocytes, we think they should be included in the histological nomenclature.

A typical example of regular type of dense connective tissue is an aponeurosis or fascia. Stecco et al. [53] described in detail fibroblast-like cells inside the plantar fascia named **fasciacytes (*fasciacyti*)**. These "missing cells" in the current version of TH are probable counterparts to synoviocytes within the internal surface of joint capsules, responsible for the production and secretion of hyaluronan.

Extension proposal for chapter *Haematolymphoid complex*

Developmental phases of the forming plasma cells derived from B-lymphocytes (plasmocytopoiesis) are described weakly. In the recent edition of the TH, only B-lymphocyte, plasmoblast and plasma cell (plasmocyte) are mentioned; two important (and clearly distinguishable at the light microscopic level) stages are missing [1]:

— **centroblast (*centroblastus*)** — a spherical cell with centrally located nucleus, containing several nucleoli, which are near the nuclear envelope;
— **centrocyte (*centrocytus*)** — a spherical cell with centrally located nucleus with a deep indentation in the equatorial plane.

These developmental stages are important for the understanding of the mechanisms of humoral immunity (e.g. centrocytes are no longer dividing cells, with primarily activated apoptosis, therefore they must bind to a follicular dendritic cell within 10 h, which may provide a "rescue signal" as a method of positive selection). In addition to that, they are also relevant for histopathologists, as some of the distinctive variants of B-cell lymphoma originating from the cells of germinal centre may be termed as centroblastic and centrocytic lymphomas [31].

Extension proposal for chapter *Cardiovascular system*

Epicardial adipose tissue (***textus adiposus epicardiacus***) is in direct contact with the myocardium and coronary vessels, this topographical relation has a great significance in both physiological and pathophysiological conditions. From the clinical point of view, several investigations have shown a relationship between increased epicardial adipose tissue and coronary artery disease [20], atrial fibrillation [16], ventricular tachycardia [52] or non-ischaemic dilated cardiomyopathy [46].

Chordae tendineae (tendinous cords), colloquially known as the heartstrings, are missing in the recent TH, too.

Witter et al. [70] revised the microscopic structure of the outermost layer of arteries, the tunica adventitia. They found two layers of connective tissue outside the media; a compact layer with many elastic fibres

in muscular type and few in elastic type of arteries and an outer layer of loose connective tissue. They proposed using the term "**tunica externa**" for the compact connective tissue layer and "**tunica adventitia**" for the outermost loose connective tissue layer as in other organs.

The term *valvula venosa* is inexact because a venous valve consists of two swallow's nest-shaped cusps, termed *valvulae*, and thus the term should be changed to ***valva venosa*** featuring two *valvulae*. These valvules are fixed to the venous wall by a firm ***margo affixus* (*margo parietalis*)** and their free concave ***margo liber*** protrudes into the lumen. When blood flows, it comes into contact with ***facies luminalis valvulae***. When it stops and turns back, ***margo liber*** is moved away from the wall, meets the opposite one and the lumen is closed. The space formed by ***facies parietalis valvulae*** is called ***sinus valvulae***. The spot of transition between *margo affixus* and *margo liber* is termed ***cornu valvulae*** and the mildly elevated segments between adjacent ends of the fixed margins are ***commissurae valvularum***. The mass of the valvule is called ***cuspis valvulae*** and it is strengthened at the fixed margin as a double horseshoe-shaped ***agger valvulae*** (clinically often termed "tuberculum" or "limbus").

Extension proposal for chapter *Lymphoid system*

Nodus lymphoideus/nodus lymphaticus/lymphonodus are used as synonyms although the term "lymphoid" from the linguistic point of view means only "similar to lymph" (*eidos* is the Greek term for form) and thus the term lymphatic should be preferred [25]. This example also represents the ambiguity of using three synonyms, a practice which should be abandoned [33]. Based on this recommendation, the whole chapter´s title should be changed to "**Lymphatic system**" (and not Lymphoid system), with sub-chapters' titles changed accordingly to Lymphatic tissue, Primary lymphatic organs, and Secondary lymphatic organs. Similarly, we recommend to use the terms Lymphatic nodule (Lymphatic follicle), Permanent peripheral lymphatic aggregate, or Periarteriolar lymphatic sheath.

Thymic myoid cell (*cellula myoidea thymi*), is a missing cell population in the description of the thymic microscopic structure, even though this cell type is mentioned in the *Terminologia Embryologica* [12]. Thymic myoid cells correspond to a muscle-like cells present in the thymic medulla and some investigations assume they role in the pathogenesis of neuromuscular disorder myasthenia gravis [21, 60].

Extension proposal for chapter *Digestive system*

Gingiva marginalis is the free gingival margin surrounding the teeth in collar-like fashion. In about 50% of cases, it is demarcated from the adjacent *gingiva alveolaris* (attached gingiva) by a shallow linear depression, termed ***sulcus gingivalis liber* (free gingival groove)**. *Zona glandularis palati duri* should contain the term for the palatine glands themselves — ***glandulae palatinae***.

Tela submucosa canalis digestorii contains two nervous plexuses and a lymphatic plexus, all stated in the TH, but also a vascular plexus — ***plexus vascularis submucosus***. In the histological description of the oesophagus, **serosa** (***tunica serosa***) is missing. Only the adventitia is mentioned, even though its abdominal part is covered by serosa. In the TH, the **M cells** (**microfold cells, *epitheliocytus microplicatus***) are mentioned only within the epithelium of the small intestine. These cells, specialised in the uptake of antigens from the gut lumen and their routing into the underlying lymphatic tissue, are present also within the lymphatic nodule-associated epithelium of the large intestine [67]. This knowledge has also a huge clinical impact; the M cell damage seems to be responsible for an increase in the uptake of microorganisms, which is observed during intestinal inflammation [35].

In the gallbladder, only tunica mucosa is mentioned. ***Tunica muscularis*** and ***tunica serosa*/*/adventitia*** are missing terms.

Stoma mesotheliale (**mesothelial stoma,** stomata, pores or gaps of von Recklinghausen) is a frequent opening (1–10 μm wide) interrupting the continuity of the mesothelium in the regions of diaphragmatic and omental parietal peritoneum. The absence of surface mesothelium in the location of these gaps expose the underlying vessels, providing a pathway for macrophages, lymphocytes, and other cells, which have an easy and ready access to the peritoneal cavity and thus they can migrate and re-enter the omental milky spots. These originally termed "organic pores" were first described by a German pathologist F.D. von Recklinghausen (1833––1910) in the diaphragmatic peritoneum [37].

The fluid within the pericardial, pleural and peritoneal cavities should be denominated as ***liquor pericardii, liquor pleurae*** and ***liquor peritonei***, terms which seem to be consistent with other terms for fluids in the human body.

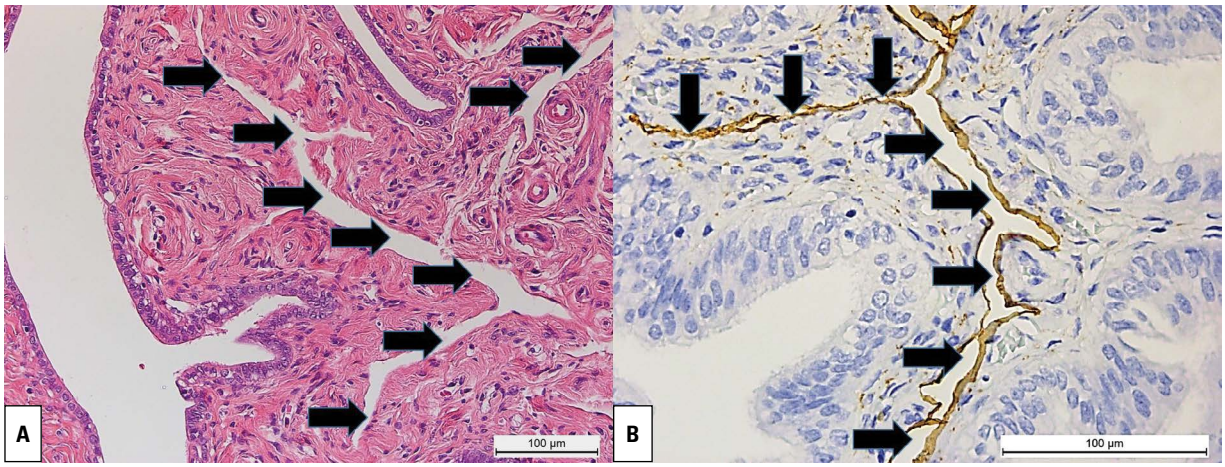

Figure 2. Lymphatic lacunae in a centre of tubal mucosal folds (marked with arrows); **A.** Haematoxylin and eosin staining, lymphatic lacunae are empty spaces lined with a layer of simple squamous epithelium; **B.** Brown-coloured lymphatic endothelial cells lined this lacuna thanks to anti-podoplanin D2-40 antibodies and diaminobenzidine as a chromogen.

Extension proposal for chapter *Respiratory system*

In the subchapter *Larynx*, several terms are missing:

— the most striking is the absence of the whole anatomical structure ***plica vocalis*** (vocal fold);

— general structure: ***tunica mucosa, tunica fibromusculocartilaginea***, ***tunica adventitia***;

— ***lamina subepithelialis*/*lamina propria superficialis*** ("space of Reinke") within the mucosa of *plica vocalis* is an extraordinary loose connective tissue rich in extracellular matrix and mostly acellular, located superficially to *ligamentum vocale* [49]. Reinke's space of the vocal fold is perceived as an important component of malignancy propagation and is also implicated in vocal fold oedema (Reinke's oedema) [51].

Intrapulmonary bronchi usually contain, at the bifurcation into two lower-ordered bronchi, a lymphatic nodule, which can be termed ***nodulus lymphaticus bronchi***. Consequently, the term *nodi lymphoidei tracheobronchiales* should be removed as it is an anatomical term and no other region-specific lymph nodes are listed in the TH. In bronchioles, terminal bronchioles and respiratory bronchioles, goblet cells are mentioned even though they are not really present in this lower part of the bronchial tree. On the other hand, ***endocrinocyti* (dispersed endocrine cells)** of the lining epithelium of the bronchial tree are missing, despite their genuine presence and clinical importance, as they give rise to lung neuroendocrine tumours, such as small-cell carcinoma [45].

Extension proposal for chapter *Urinary system*

The terms ***calices renales majores et minores* (major and minor calices of the kidney)** are missing. *Cellula interstitialis* is located in the renal interstitium. Not much is known about them, **the peritubular type** (***cellula interstitialis peritubullaris***) is a probable source of erythropoietin [36], while **the medullary type** (***cellula interstitialis medullaris***) supposedly produces some hypotensive agents — e.g. vasodepressor hormone "medullipin" in response to increased renal perfusion pressure [36, 57]. However, the exact cell population responsible for the production of both hormones, erythropoietin and medullipin, is not yet clearly identified, they may also be produced by capillary pericytes, not only by interstitial cells — fibroblasts.

The sublayers of *tunica muscularis* in both the ureter and urinary bladder are missing in the TH. They should be added for the ureter as follows: ***stratum longitudinale*** and ***stratum circulare***; and for the urinary bladder as follows: ***stratum plexiforme***, ***stratum circulare*** and ***stratum longitudinale***. The mucosa of the urinary bladder contains folds whose height changes according to its distension, but still they should be designated in the nomenclature as ***plicae mucosae***.

Extension proposal for chapter *Genital systems*

The mucosal folds of the uterine tube are very abundant and ramified, especially within its ampulla. They should be classified as ***plica mucosa primaria, secundaria et tertiaria***. In the centre of every mucosal fold, as well as in the fimbriae of the uterine tubes, dilated lymphatic spaces are situated (Fig. 2).

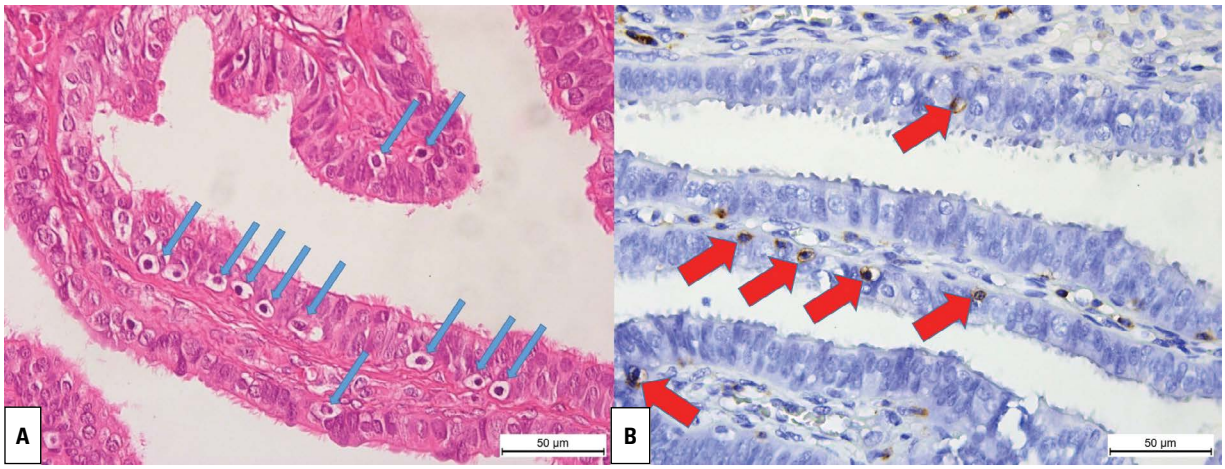

Figure 3. Small, spherical cells localised near the basement membrane of tubal epithelium, which are in the recent *Terminologia Histologica* termed as "basal epitheliocytes" (marked with arrows), but *de facto* these cells are intraepithelial T-lymphocytes; **A.** Haematoxylin and eosin staining; **B.** Membrane positivity after anti-CD3 immunohistochemical staining, diaminobenzidine as a brown chromogen was used for visualisation.

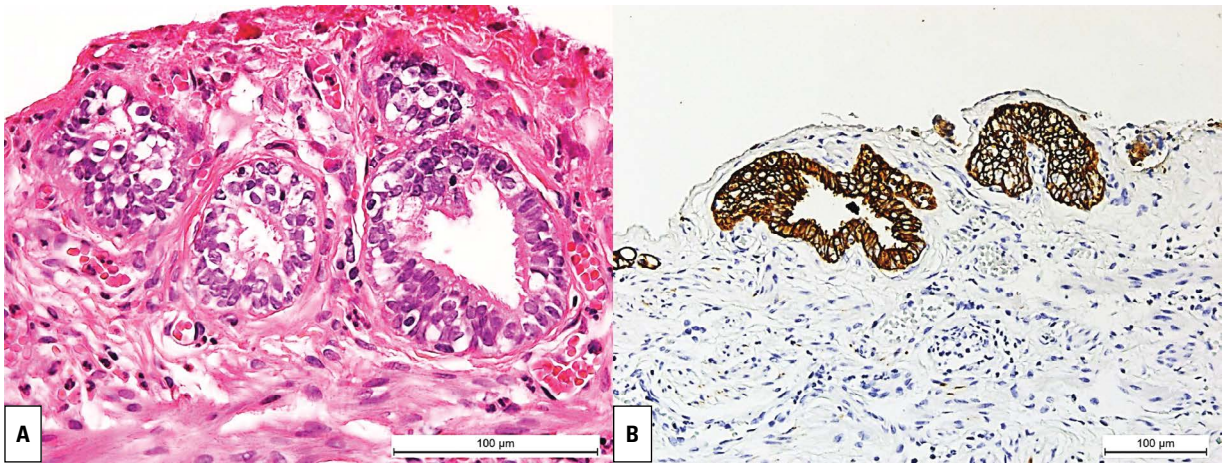

Figure 4. Walthard cell nests in the subserosal tissue; **A.** Haematoxylin and eosin staining; **B.** Anti-pancytokeratin AE1/3 antibodies, diaminobenzidine as a brown chromogen was used for visualisation.

They are termed **lymphatic lacunae of tubal mucosal folds and fimbriae** (***lacunae lymphaticae plicae mucosae et fimbriae***) [63].

The description of the tubal epithelium in current histological nomenclature is confusing. We recommend removing the term basal epitheliocyte (*epitheliocytus tubarius basalis*) from the TH and replacing it with **intraepithelial T lymphocyte** (***lymphocytus T intraepithelialis***), because these round cells localised near the basement membrane express surface markers of T lymphocytes (Fig. 3) [65]. No details are given concerning *tunica serosa* of the uterine tube and uterus. Usual components — ***mesothelium, mesotheliocytus, lamina propria, tela subserosa*** — should be listed. Often incidental microscopic findings are epithelial cell clusters found in periuterine tube tissue termed **Walthard cell nests** (Fig. 4). They may be found anywhere in broad ligament, including ovarian hilum and may measure few millimetres in diameter [44]. The exact origin of these cell nests is not known; probably they developed as an inclusion and resultant metaplasia of mesothelial cells to urothelial cells. Walthard cell nests were found in the subserosal tissue of more than 5% of uterine tubes [22]. But the Latin term for Walthard cell nests is still missing. ***Tunica labiorum*** is a synonym for *stratum musculare leve* of the labia and can be incorporated as the non-preferred term.

Histology of the ***placenta*** is deliberately omitted. This absence is simply brushed off by the comment to look into *Terminologia Embryologica* [12].

The population of "halo cells" is missing in the description of the epithelial lining of *ductus epididymidis*.

Halo cells are small cells with a narrow rim of clear cytoplasm around their dark nucleus, present throughout the epididymal epithelium. They are the primary immune cells in the epididymis. Thanks to immunostaining, it is now clear that the population of halo cells is comprised of lymphocytes and monocytes [15, 48].

Ampulla glandulae bulbourethralis — does this term mean the enlarged beginning of *pars spongiosa urethrae masculinae*, located just below *diaphragma pelvis* within *bulbus penis*, called in clinical practice "ampulla urethrae" or does it describe a specific part of the gland? In the former case the term should be change to ***ampulla urethrae*** [43], in the latter it should be defined in the footnote as it is not a widely known structure. The term for ***stratum membranosum telae subcutaneae penis*** (former "fascia penis superficialis") should be added, based on the existence of the same term concerning the layers of the anterior abdominal wall in the *Terminologia Anatomica* [11]. ***Cutis penis*** is a missing term in the subchapter *Penis* and should be added, together with the term ***pubes*** describing regionally specific type of hair. Similarly, this term should be listed under *cutis scroti* as well.

Extension proposal for chapter *Endocrine system*

Glandula suprarenalis is supplied by three different arterial sources branching from the *aorta abdominalis* (*arteria suprarenalis media*) or its direct branches (*rami suprarenales superiores, arteria suprarenalis inferior*). Before entering the gland's capsule, all these source arteries ramify into 50–60 small branches, pass into the gland, send somatic capillaries for the capsule and finally form a plexus beneath the capsule — ***plexus vascularis subcapsularis***.

In the histological description of the thyroid gland, pseudopods are mentioned as temporary protrusions or retractile processes of the cytoplasm of follicular cells/T thyrocytes. We doubt the existence of true pseudopods in follicular thyrocytes.

Extension proposal for chapter *Nervous system*

Zone of Obersteiner and Redlich is a segment of the nerve root in the subarachnoid space between the brainstem or spinal cord and the site of transition from glia to neurolemma. It has been termed ***zona transitionis radicum nervorum*** in the *Terminologia Neuroanatomica* [14].

There is a general term *motoneuron* (*neuron motorium*) for the neuron with centrifugal innervation of any kind of muscle tissue. Consistently, there should be a general term for the centripetal neuron, transmitting sensory information from any receptor to the central nervous system — ***sensoneuron* (*neuron sensorium*)**.

Extension proposal for chapter *Sensory receptors and sense organs*

It is still questionable whether a specific sensory receptor or end organ exists in the regions of the penis and clitoris, despite multiple morphological studies on the matter. In some textbooks and scientific papers, ***corpusculum genitale*** (genital corpuscle; corpuscle of Dogiel; end bulbs of Krause; mucocutaneous organ of Winkelmann) is mentioned as a small round or spindle-shaped encapsulated organ located below the epidermis of the external genital organs, nipples and within or near the cavernous bodies of the penis and clitoris. Tactile stimulation of genital corpuscles probably provokes vasodilatation and filling of the cavernous bodies, secretion of bulbourethral and vestibular glands, and other sexual phenomena as ejaculation and orgasm [9, 34, 38, 39, 69].

Epithelium anterius corneae is a stratified squamous non-keratinising epithelium, usually composed of five layers (approximately 70 μm thick). This epithelium represents one of the most rapidly regenerating mammalian tissues, undergoing full turnover over the course of 1–2 weeks [18]. Histologically, we can distinguish three layers with different morphology: ***stratum superficiale*** with flat cells featuring finger-like or ridge-like processes on their apical surface; ***stratum intermedium*** with cells each covering always two basal cells beneath; and ***stratum basale*** [19]. Additionally, this robust and efficient regenerative capacity is dependent on the function of stem cells residing in the limbus, a structure forming the border between the cornea and conjunctiva. This cell population is termed in the current edition of the *Terminologia Histologica* and of the *Terminologia Neuroanatomica* as corneal stem cell (*cellula cornealis praecursoria*), but based on the anatomical localization of this cell population, much more suitable term is **limbal stem cell (*cellula limbalis precursoria*)** [18].

Lamina suprachoroidea choroideae continues onto the *corpus ciliare* as ***lamina supraciliaris,*** but this term is missing. Another missing term is ***canalis ciliaris***. This is a narrow slit within *epithelium ciliare* (*pars ciliaris retinae*), between its layers — ventral *epithelium pigmentosum* and dorsal *epithelium non pigmentosum*.

Macula lutea of the retina can be divided into several circular zones related to the proportion of

cells and thickness of the retina. This subdivision has an important clinical impact for ophthalmologists:

— the very centre is termed umbo (maculae luteae), contains only neura conifera (cones) and gliocyti radiales (radial glial cells of Müller) and corresponds to the visible foveolar reflex provoked during fundoscopy;
— *foveola* is 0.35 mm wide, larger centre containing *neura conifera* (cones) and *neura bipolaria* (bipolar neurons), and lacking vessels. It serves as a band for fixation to *stratum limitans externum*;
— *fovea centralis* is 1.5 mm wide central depression without *neura bacillifera* (rods). The centre of *fovea centralis* (with diameter of 0.5 mm) features no capillaries. It is bounded by a yellow margin termed ***clivus*** with a declination of 22° and is terminated with ***margo***;
— ***parafovea*** is 0.5 mm wide band encircling *fovea centralis*, containing 4–6 layers of *neura ganglia multipolaria* (retinal ganglion cells) and 7–11 layers of *neura bipolaria* (bipolar cells);
— ***perifovea*** is 1.5 mm wide band encircling *parafovea,* containing 1–4 layers of *ganglia multipolaria* (retinal ganglion cells), 6–9 layers of *neura bipolaria* (bipolar cells), and lower density of *neura conifera* (cones).

Between the eyelid margin and the tarsal groove, multiple ridges and grooves are found, which communicate with goblet cell-lined invaginations of the conjunctival epithelium. These ***cryptae conjuctivae*** (of Henle) secrete mucin, coating the cornea to allow an even distribution of the tear film across the eyeball surface. Only few crypts are present at birth; most develop at puberty [40]. In case of their ring-like arrangement around the cornea, next to *limbus corneae*, they used to be called glands of Manz or "***glandulae utriculares***".

Papillae conjunctivales (palisades of Vogt) are conjunctival papillae, underlaid with radiate fibrovascular ridges, serving as a source of stem cells. They appear in the histology images as small "hills" of connective tissue protruding in the vertical direction from the sclera toward the limbal epithelium [2]. They are located above all in both fornices of *tunica conjunctiva* close to *limbus corneae*. *Papillae conjunctivales* are more discrete in younger and more heavily pigmented individuals, and they appear more regular and prominent at the lower limbus than at the upper limbus. Additionally, the anatomy of the palisades appears to be unique for a given individual, comparable to fingerprints [17].

The cochlear ganglion (spiral ganglion) consists of **two types of bipolar neurons**, which are not differentiated in the TH. The **type I neurons** correspond to 90–95% of the neural population of the spiral ganglion. These large bipolar neurons have the somas and both projections myelinated and connect the inner hair cells of the organ of Corti with the brainstem cochlear nuclei. In contrast, the spiral ganglion **type II neurons** make up only 5–10% of the total population of the ganglion. They are pseudounipolar and non-myelinated neurons which innervate the sensory outer hair cells [5].

Extension proposal for chapter *Integument*

Stratum membranosum telae subcutaneae is an item of the *Terminologia Anatomica* and should be added to the TH as well. It describes the denser layer of *tela subcutanea* present in specific regions, such as inferior part of the anterior abdominal wall (obsolete term "fascia abdominis subcutanea of Scarpa"), penis (obsolete term "fascia penis superficialis") and perineum (obsolete term "fascia perinei superficialis of Colles").

Pilus vellereus **(vellus hair)** is a thin, short, slightly-coloured, hardly visible hair appearing on majority of the body during childhood, found in adult women as well. The term is derived from the Latin word "vellus", meaning fleece. ***Cervix pili***, the neck of a hair, is a part of *radix pili* where *vagina radicularis epithelialis interna* (*vagina matricalis*) terminates and the duct of *glandula sebacea* opens (a spot of branching of the pilo-sebaceous unit).

Alveolus glandulae lactantis contains *stratum myoepitheliale* but in the TH, no specific cells forming this layer are mentioned — the term ***myoepitheliocytus*** should be added. Similarly, no cells forming the wall of *ductus extralobularis*, *ductus intralobularis* and *ductus lactifer* are stated.

CONCLUSION AND FURTHER PERSPECTIVES

We think a wide expert discussion will make it easier for officers, coordinators and advisors for the histological terminology within the FIPAT to prepare the new edition of the *Terminologia Histologica*, which will be truly widely internationally and professionally accepted. An example could be taken from the last year´s *Terminologia Neuroanatomica* [14], already a widely accepted recent revision of the chapter "Central nervous system, Peripheral nervous system and Senses" within the nomenclature *Terminologia Ana-*

tomica [11], and TH [55]. Since its publication, *Terminologia Neuroanatomica* already served as the basis for an illustrated neuroanatomical dictionary [56]. This work is unique in that it provides the reader with the most up-to-date nomenclature used to describe the human nervous system and related sensory organs. It may serve also as an inspiration, as we think the knowledge form the revised edition of the histological nomenclature should be spread in similar fashion.

At the end, there is still a question how to deal with the issue of eponyms. In medicine, an eponym is a designation of a morphological structure, disease, or syndrome, derived from a person's name. Eponyms reflect medicine's rich and colourful history and can be useful for concise conveying of complex concepts [3, 10]. Although they have not been considered official terms in the anatomical nomenclature since 1955, they are still widely used in clinical practice [4]. However, a problem arises when multiple different structures bear the same eponym (e.g., Malpighian corpuscle as an eponymic term for the splenic white pulp and at the same time, for the renal corpuscle). This can be significantly confusing. It is also difficult to estimate, which eponyms are truly internationally recognised and routinely used, and which are known only locally in a particular country. One example is "membrane of Slaviansky" which is an eponymic term for the basement membrane between granulosa cells and thecal cells in the ovarian follicles usually used in French ("la membrane de Slavianski") and Slavic languages ("Slavjanského membrána"), but we could not find this eponymic term in English literature. The *Terminologia Embryologica* [12] offers a solution by incorporating eponyms, along with preferably Latin and synonym terms, UK English and US English terms with synonyms. On the other hand, there is an option of complete omission of using and referencing the eponyms as a whole. However, if the consensus of leaving out the eponyms is established, another issue will arise: what to do with those histological terms which are exclusively eponymic, so they have no Latin or English equivalent? These terms have been created exclusively from eponyms:

— *Schwannocytus*; *Neurolemmocytus* (Schwann cell; Neurolemmocyte), named after Theodor Schwann,
— *Cellula panethensis*; *Exocrinocytus cum granulis acidophilicus* (Paneth cell of small intestine), named after Joseph Paneth,
— *Neuron purkinjese* (pear-shaped neurons in the cerebellum), named after Jan Evangelista Purkyně (Purkinje);
— *Stratum purkinjese* (layer of Purkinje cells in the cerebellar cortex);
— *Apparatus golgiensis* (a cell organelle), named after Camillo Golgi.

Is it necessary to prefer the terms derived from eponyms? "Enemies of the eponymic terms" stated that they are not transparent and indicative, as they fail to clearly describe the location, shape, relation, and also the function of a structure. It should be reasonable to prefer the original non-eponymic terms. It is easy in the first case — ***neurolemmocytus***, but in the others, the eponyms should be subjected to a deep and thorough discussion, since the non-eponymic equivalents do not exist.

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