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Aims and Scope

The Journal of Applied Physics is published tri-annually Enriched publications. Journal of Applied Physics is peer reviewed journal and monitored by a team of reputed editorial board members. This journal consists of research articles, reviews, and case studies on Science Technology. This journal mainly focuses on the latest and most common subjects of its domain.

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Contents

Sr. No.	Article / Authors Name	Pg. No.
1	DIGITAL TECHNOLOGIES ARE AN IMPORTANT FACTOR FOR ECONOMIC GROWTH - *Abdurakhmanov Abdulaziz*	1 - 3
2	DESIGN AND PERFORMANCE PREDICTION METHOD FOR SMALL HORIZONTAL AXIS WIND TURBINES AND ITS APPLICATION - *NARIMANOV BAXODIR ABSALOMOVICH*	4 - 8
3	ASSESSMENT OF THE RISK OF ENDOMETRIAL HYPERPLASIA IN THE PERIMENOPAUSAL PERIOD - *Nurkhanova N.O.*	9 - 13
4	SAMPLE OF N. DAVKARAEV'S MUSICAL DRAMA "ALPOMISH" - *MALIKOVAILMIRA NIZAMOVNA*	14 - 15
5	CLASSIFICATION OF NAMES OF TASHKENT CITY NEIGHBORHOODS - *Sereyeva Guljazira Adilbayevna,Rakhmatova Nodira Bakhrievna*	16 - 20

ISSN : 25085

DIGITAL TECHNOLOGIES ARE AN IMPORTANT FACTOR FOR ECONOMIC GROWTH

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ANNOTATION: *The article provides information on the essence of the digital economy, its level of development in other developed countries, and tries to highlight the objective need for the transition of all sectors of the country to the digital economy in the current globalization.*

KEYWORDS: digital economy, internet, mobile network, business, "information society".

The transition to a digital economy is a matter of urgency for all countries and, of course, businesses. There are many definitions of the digital economy in the scientific literature and in the press, including in foreign sources that the digital economy is a link between digital information technology and economic agents, while others link it to the Internet. As a result of the current state of economic development, some define it as the activity of creating, distributing and using digital technologies and related products and services. There are other definitions of digital economy. Indeed, such definitions of the digital economy accurately express its essence, as it is appropriate to look at the digital economy as a process of development connected to technology and economic agents or the Internet, but not enough, because the digital economy, primarily associated with the development of digital information technology and the development of socio-economic areas of all countries.

Therefore, it would be more accurate to describe the digital economy as the provision of socio-economic development as a result of the introduction and effective use of modern information technology in all sectors of the national economy and various spheres of social life of each country. we count.

The digital economy is not limited to the areas of e-commerce, production of goods and services associated with information technology, but also the development of the national economy in health, science and education, construction, energy, agriculture and water management. The first foundations of the digital economy are information technologies. It would be more accurate to call it digital information technology, because information technology is based on relevant numbers. Their evolution is divided into several stages and has its own characteristics. Clearly, the emergence and development of digital information technology is an objective process driven by the demands of society's development. Today, the main goal of the promotion of digital information technology is to create a system of information technology at a level that allows to solve any strategic tasks, to make decisions on the optimal management of socio-economic processes. This will have an impact on the development of the digital economy. It should be noted that the advent of personal computers was an important step in the development of digital information technology. The creation and use of new information technology systems is an opportunity to meet existing needs. In this case, all users are actively involved in the promotion of digital information technology.

Today, digital information technology is focused on mass and fast processing of information. They need to help managers make wise decisions, protect themselves from the unforeseen events of a changing market, create the conditions necessary to be competitive, and ultimately succeed. At present, the most popular and widespread technological means of developing digital information technologies is the

Internet. The long-term spread of information technology in the world has determined the development of national economies, led to radical changes in people's lives and laid the foundation for the emergence of the term digital economy in science. It is the optimal development of the national economy of each country and thus the material well-being of the people. The rapid introduction of digital information technologies in all sectors of the national economy and in all spheres of the social sphere is a priority for all countries.

Today's rapid digitalization has created a "new economy," the digital economy. This little-studied and deep-rooted economy offers great opportunities for producers to organize effective marketing activities in business and social spheres, minimize costs and maximize profits, sell goods and services successfully.

In recent years, a new generation of digital information technologies has emerged in business and other socio-economic activities around the world. terms appeared. These are all elements of the digital economy. According to estimates, the transition to a digital economy will increase the productivity of companies operating in the national economy, increase their efficiency, increase production, ensure transparency, increase the absolute volume of production and sharply reduce its cost. will give. This is its biggest advantage. The digital economy provides quality services to consumers, buyers and customers, and a number of other conveniences. This includes ordering lunch during rush hour, calling a taxi, sending money to a distant relative, cross-border business collaboration, e-commerce, remote office.

The introduction and rapid development of digital technologies has become one of the top priorities for a number of countries. They are characterized by a long period of digital development, continuity of priorities, from the creation of basic information and communication technologies to the formation of appropriate policies in this area and support for the widespread introduction of digital technologies.

As a result of the digital economy in the twenty countries that currently lead the world rankings, 2 trillion a year. Additional funds in the amount of USD are being created. It is estimated that their implementation will increase the productivity of firms by 40% and GDP by at least 30%. At the same time, it prevents over-writing, the growth of the shadow economy, and the spread of such vices. As noted by the President Sh.M.Mirziyoev, by ensuring a high level of economic growth, it will prevent and eliminate the scourge of corruption. The need to develop a new economy becomes even more pressing as economists predict that by 2022, the digital economy will account for about a quarter of the world's gross domestic product.

Virtual reception of the Prime Minister of the Republic of Uzbekistan for consideration of applications of entrepreneurs of the new version of the portal "Single interactive public services" on the further development of forms of communication of individuals and legal entities with government agencies in the transition to a digital economy based on the widespread introduction of the Internet in our country The launch of the portal "business.gov.uz" can be considered as the beginning of important events.

So, along with some positive developments in the transition to a digital economy in our country, there are many issues that need to be addressed. As the President noted, “Although our country has risen by 8 places in the International Information and Communication Technologies Development Index in 2019, we are still far behind. It is true that most ministries, departments and enterprises are far from digital technologies. "

As the head of state noted, "Of course, we know very well that the formation of a digital economy requires the necessary infrastructure, a lot of money and labor resources. But no matter how difficult it is, if we don't start today, when will we? It will be too late tomorrow. Therefore, the active transition to the digital economy will be one of our top priorities for the next five years. ”

Our country has great natural resources. Of course, their efficient and effective use also contributes to economic growth. For example, in the current era of globalization, the development of the world's countries does not depend only on their natural resources or geographical location. This makes it necessary to ensure close cooperation between government agencies and businesses in the introduction

of innovative ideas, technologies and developments, to pay special attention to the development of personnel with deep knowledge and intellectual potential.

So, there are enough problems in the widespread introduction of the digital economy in our country. The adoption of the Digital Uzbekistan-2030 Program, approved by the Presidential Decree in October this year, will undoubtedly serve as a programmatic solution.

In conclusion, we consider it appropriate to quote the founder of Microsoft, Bill Gates, a well-known figure in the field of information technology: companies out of business.

This shows that the transition of all countries to the digital economy is a matter of time.

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DESIGN AND PERFORMANCE PREDICTION METHOD FOR SMALL HORIZONTAL AXIS WIND TURBINES AND ITS APPLICATION

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ANNOTATION. *The article deals with small wind turbines for non-volatile systems or small smart wind turbine power systems. Not all small turbine manufacturers around the world have access to the engineering capabilities to design an efficient turbine. The purpose of this paper is to provide an easy-to-use integrated method for designing and predicting the performance of wind turbines, as well as demonstrating examples of its application.*

The base model for the performance design and prediction method is based on an improved version of the well-established vane element momentum theory coded in MATLAB™. Results: (I) full geometry of aerodynamically shaped and twisted blades that are designed to provide maximum power output for a given wind speed, and (ii) dimensionless turbine performance in terms of power, torque and thrust ratio. depending on the speed ratio of the handpiece. Dimensionless operating characteristics are the basis for dimensional characteristics and synthesis of the rotor to the electric generator with its load.

Two parametric studies illustrate typical results of the design method and performance prediction: change in the calculated tip speed ratio and change in the number of blades. The predicted effect of these parameters on dimensionless performance is in good agreement with common knowledge and experience.

Finally, the interaction of the various turbine rotors and a given transmission/charger is simulated. The selection criteria for the rotor are the annual energy output, the rotational speed of the rotor at the calculated wind speed, as well as in strong winds, and the axial thrust exerted on the rotor by the wind. The complete rotor/transmission/charger assembly has been successfully tested in the wind tunnel of the University of Siegen.

KEYWORDS: small-sized horizontal-axis wind turbine, design, performance calculation, impetus of the blade element.

INTRODUCTION

Three trends can be observed in the production and supply of electricity: first, the use of free primary, i.e. renewable energy, the avoidance of CO2 emission certificate costs and other end-of-life waste disposal costs. Second, distributed small and unstable energy resources are combined into a small smart grid to improve the reliability and reliability of decentralized networks. "Smart" in this context refers to the control of production and distribution using smart meters, smart appliances, storage media such as batteries and renewable energy. This may be of particular interest to rural distribution networks and the

future infrastructure needed for electric vehicles. For example, under the Seventh Framework Programme, the European Commission has supported numerous projects such as “Open Systems for Energy Services”, “Smart… Rural Grid Implementing Sustainable Electricity Distribution Infrastructures, Services and Business Models”, “Scalable Household Management Infrastructure” (FP7 *one+). Thirdly, in some cases, the cost of supplying electricity to the grid (or receiving electricity back from the grid) may exceed all other costs. Connecting to the public network, even in remote areas, may not be economically feasible. This paper focuses exclusively on small horizontal axis wind turbines (HAWTs) for grid-independent or small smart grid systems, fig. 1. It is clear that current and future demand provides sufficient support to support a significant number of producers. In highly industrialized regions of the world, advanced techniques allow high quality products and even mass production, while in other parts of the world, simple manufacturing techniques are needed, Fig. 2. In the past, ill-conceived small wind turbines have damaged the reputation of such machines. Today, standards and testing institutes are increasingly providing consumers with realistic and comparable performance ratings for competing products. Examples are the British Small Wind Turbine Standard [2], the German Small Wind Turbine Annual Market Review [3], and the Austrian Small Turbine Test Site Energie-For SchungsparkLichtenegg [4]. On the other hand, not all small turbine manufacturers, especially small-scale manufacturers, may have access to engineering capabilities to design an efficient turbine. There have been a number of studies on wind turbines focusing on structural analysis, rotor dynamics and shape optimization of wind turbines. Yuan Chang Chen et al. [19,20] and Wel Chen et al. [21], have recently studied and reported in detail on blade rotor dynamics and blade modeling. Many computational approaches have also found application in the aerodynamic design of wind turbines, such as computational fluid dynamics (CFD), wake method, and blade momentum theory (BEM). The BEM theory is widely used in the aerodynamic design of wind turbines due to its simplicity and accuracy [26]. With blade optimization, a power factor close to the Betz limit of 59.2% can be realized with wind turbines.

Most wind turbine optimizations are carried out for wind turbines operating under design conditions. Wind turbines are subjected to various operating conditions. In addition, matching the electrical generator to the performance curves of the turbine is fundamental to ensure that the components are protected from extreme structural stresses.

Figure 1. Examples of micro and small wind turbines in the Netherlands

STRUCTURE AND PERFORMANCE CALCULATION PROCEDURE

The turbine design methodology includes three main steps: (i) designing the HAVT rotor, especially its shaped and twisted blades, (ii) predicting its performance in terms of shaft power, shaft torque and axial thrust on the complete rotor, (iii) the total power generated by the "load" torque from the generator. After these last steps, it is easy to determine the total power generation for a given—say, annual—wind speed histogram. Ultimately, measures must be developed to achieve low wind speed on turn on and off function in high winds. The last steps are beyond the scope of this article.

The purpose of this exemplary case study is to develop a HAWT for a small generator/charger. The analysis involves comparing the performance curves of the wind turbine rotor with the torque characteristic of the charger. After fabrication, a final wind tunnel experiment confirms the theoretical analysis.

For experiments, the rotor was installed in front of the transmission, consisting of a steel shaft, separate bearings and an electric generator. The charger was connected to the generator. The entire assembly has been tested in the wind tunnel of the University of Siegen. This wind tunnel is of a closed type, providing a maximum wind speed in the wind tunnel of 70 m/s with a turbulence intensity of less than 0.35%. On fig. 12 shows an experimental setup in a wind tunnel (all dimensions are in milli meters). The wind speed was measured with a propeller anemometer, and the rotation speed was measured with an optical laser tachometer. The wind speed changed in steps. During steady operation, the speed of rotation of the turbine was recorded. It is important to note that the air density in the wind tunnel laboratory was approx. p= 1.17 kg/m3, which leads to different turbine dimensional characteristics compared to the previous sections. This has been taken into account. Ideally, the power at the rotor shaft should be measured. It was impossible. Instead, electrical power was measured.

A comparison of the rotational speed of the entire rotor/charger assembly in volumetric mode ("Battery discharged - charge") at various wind speeds is shown in Figure 13 on the left. Obviously, the “loading” of the rotor by the electric generator is very close to what was expected from the previous analysis. This partially confirms the aerodynamic design of the rotor. The difference between the predicted power on the rotor shaft and the measured electrical power, fig. 13 on the right is a measure of the overall electrical efficiency of the entire assembly. The big loss is connected with the electric generator. Its electrical efficiency characteristic has been measured separately - similar to the full generator/charger/battery characteristics previously, and is depicted for n = 560 rpm in fig. 14. At PS = 29 W (corresponding to c0 = 6 m/s), the electric power of the generator is 47% efficient. Other electrical losses are associated with the battery charger and - from c0 = 7.5 m/s - with a resistive load resistor to protect the battery. Ultimately, fundamental errors due to blockage of the wind tunnel test section by the rotor and potential reduction in turbine efficiency due to manual fabrication may explain the rotor's lower-than-predicted power factor. Note that the turbine shaft power could not be measured directly during the wind tunnel campaign.

SUMMARY AND CONCLUSION .

An analytical method for the aerodynamic design of horizontal axis wind turbines is described, including performance prediction. The theory behind design, shaft power, and thrust prediction is an advanced version of the well-established blade-element-momentum (BEM) theory, coded in our proprietary MATLAB™ deap Wind program. The procedure yields a geometry of aerodynamically shaped and twisted blades that are designed to produce maximum power output for a given design wind speed. Two parametric studies demonstrated typical results of the design method and performance prediction: (i) a design option for tipping speed ratio λ; the higher λ the design, the higher the rotational speed at a given wind speed and the lower the torque. Therefore, the choice λ of design allows the turbine to be adapted to locations with low or high average wind speeds. In addition, the higher λ the design, the thinner the blades, which can affect the quality of workmanship and the reliability of the design. (ii)

Changing the number of blades B in the rotor with the design unchanged; as expected, the results showed that the dimensionless performance of the turbine is almost independent of the number of selected blades; the negligible influence of B is due to the influence of Re and various aerodynamic loss mechanisms taken into account in the improved theory of momentum of the blade element. Thus, the selection criterion for B is, among other things, the technical feasibility of many thin or a few more massive blades, and not the power output, as is sometimes naively assumed.

After all, the more detailed case study was for a micro wind turbine for a small, inexpensive generator/charger. The aim was to provide turbine blades with high aerodynamic quality, which could be produced using technologies available in less developed regions of the world. The analysis included comparing the performance curves of the turbine rotor with the torque curve of the charger, fabrication of the rotor, and a final wind tunnel experiment to validate the theoretical analysis. The starting point was a yearly histogram of measured wind speed data collected at a candidate site in central rural Kenya. Prior to wind turbine design, the torque/speed characteristic of a generator was determined experimentally in the laboratory by connecting the generator shaft to an auxiliary motor.

Torque was measured at any set speed using a counter torque measuring shaft. The generator was connected to a charge controller and a dead battery. The interaction of various turbine rotors and transmission/battery charging has been simulated. The criteria for selecting the rotor were the annual output of energy on the shaft, the speed of rotation of the rotor at the most prevailing wind speed and in strong winds, as well as the axial thrust acting on the rotor by the wind. A blade manufacturing technology was chosen that required only a standard carpentry shop. Compared to 3D printing and additive manufacturing, this technology is simple, cheap, and available to less developed countries to develop wind turbines to power communities outside of national grids. Finally, the complete rotor/transmission/charger assembly was tested in the wind tunnel at the University of Siegen. The rotation rate for various wind speeds is very close to what was expected from the previous analysis. This partially confirms the aerodynamic design of the rotor. The difference between the predicted power on the rotor shaft and the measured power of the electric generator. i.e., the overall electrical efficiency value is mainly related to the electrical losses in the alternator and battery charger circuit. Future efforts should include passive yaw and storm protection. The tail vane can act as a passive yaw system or a downwind rotor setting. Predictive thrust can facilitate the design of any mechanical tilt mechanism and ultimately the sizing of the tower. Advanced electrical control can help to safely shut down in high winds and start the turbine early.

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ASSESSMENT OF THE RISK OF ENDOMETRIAL HYPERPLASIA IN THE PERIMENOPAUSAL PERIOD.

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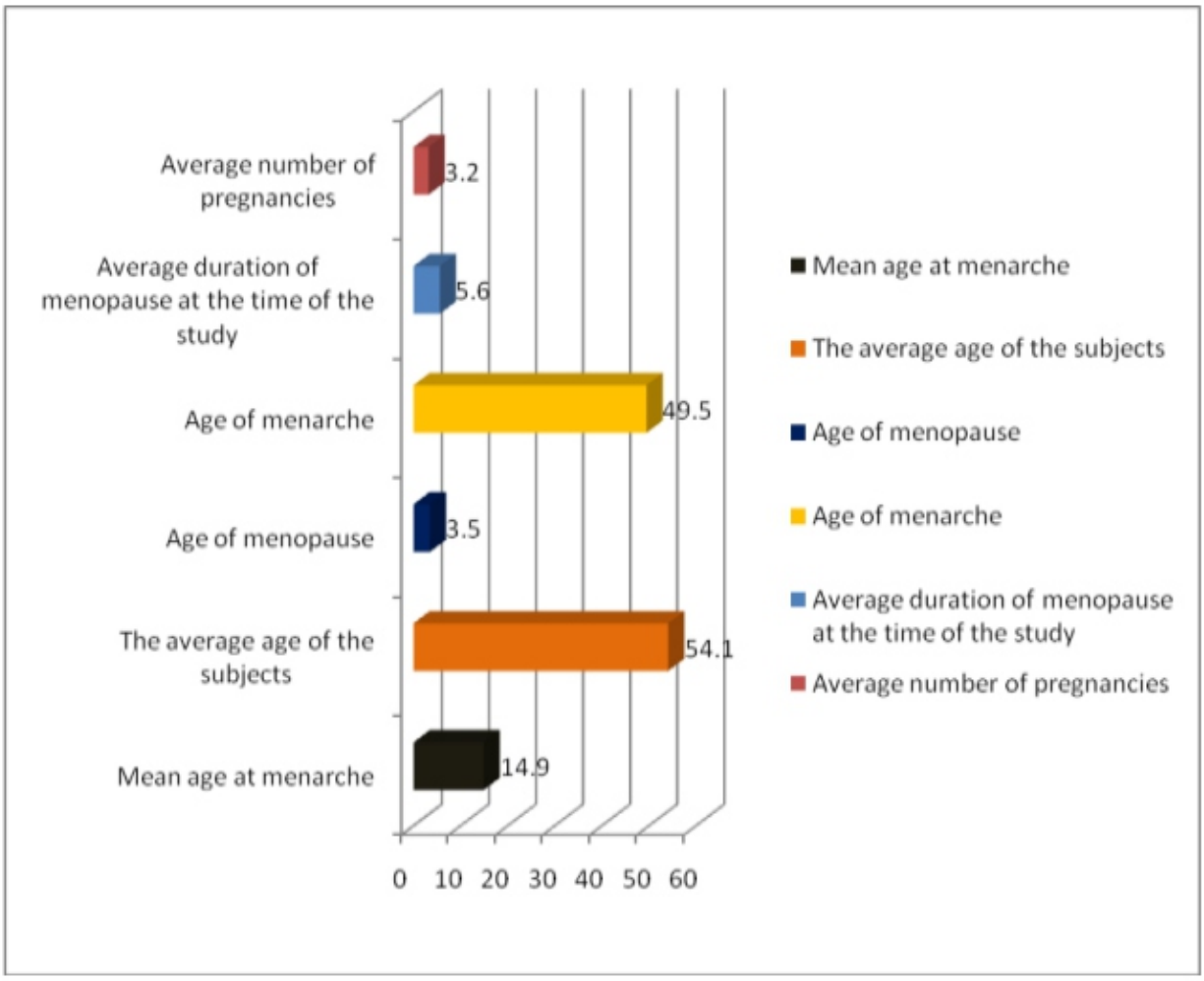
SUMMARY. Endometrial hyperplasia is a gynecological disease characterized by the growth of the endometrium - the inner layer of the uterus, as a result of which its thickness and volume increase. According to statistics, a similar disease is diagnosed in 10-20% of patients. The disease develops in young women of childbearing age. With the onset of menopause, the risk of developing the disease increases several times. Normally, the functional layer of the endometrium increases in the first half of the cycle: the uterus is preparing for a possible pregnancy. If fertilization does not occur, then during menstruation, the functional layer is rejected and removed from the body. These cyclical changes are regulated by the correct ratio of female sex hormones. All processes depend on the correct ratio of female sex hormones. At the slightest hormonal failure, the maturation and rejection of the endometrium is disturbed, the cells actively divide, but are not removed in time, the inner layer of the uterus thickens, and excessive growth can occur both in separate areas and evenly. After a certain time, the endometrium is still rejected, and profuse bleeding occurs. In the absence of treatment, the process is constantly repeated. With endometrial hyperplasia, a variety of complications are possible, one of the serious ones is the malignancy of the process, developing into cancer. This article provides data related to this pathology.

RELEVANCE. Endometrial hyperplasia is most often observed in premenopausal women suffering from dysfunctional uterine bleeding that occurs after a delay in the next menstruation [1,4,10]. Bleeding can be prolonged with moderate or profuse blood loss, sometimes profuse (not stopping without the use of special measures in a hospital setting). To confirm the diagnosis of endometrial hyperplasia, the level of blood hormones is examined, an ultrasound examination of the small pelvis with a vaginal sensor is performed [2,3,7]. The main diagnostic method is a separate diagnostic curettage performed during hysteroscopy. Curettage is prescribed on the eve of menstruation or on the 1st day of bleeding. Part of the removed endometrial tissue is sent for histological examination to identify the form of the disease (glandular, glandular-fibrous or fibrous) and the presence of atypical (malignant) cells [5,6,8,9]. At present, the radioisotope study of the uterus is becoming increasingly important. With the help of this diagnostic study, it is possible to determine not only the presence of hyperplastic processes in the endometrium, but also the degree of their activity (to assess the risk of malignancy of the process).

Purpose of the study. To determine the main risk factors for endometrial hyperplastic processes in women in the perimenopausal period.

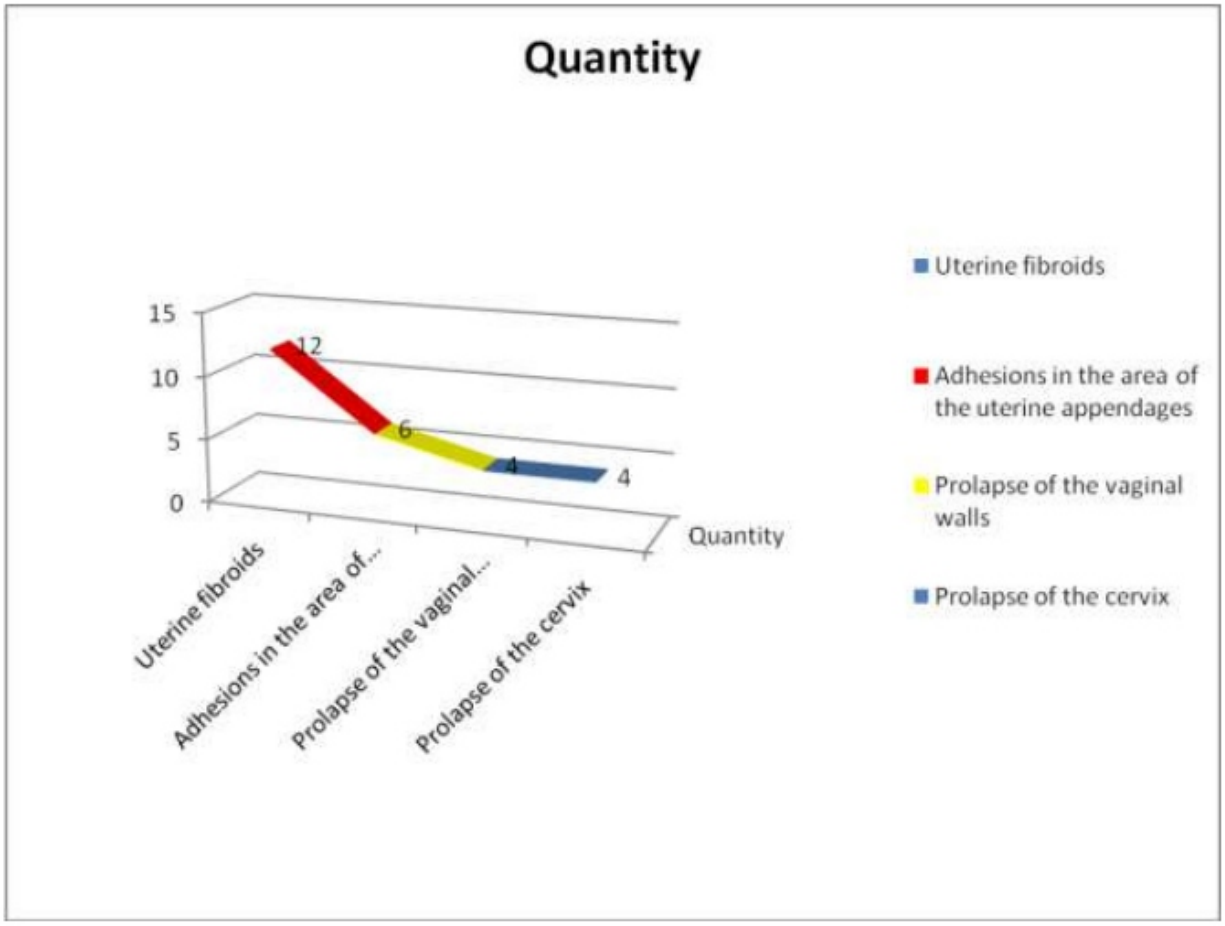
Materials and research methods. We examined 46 postmenopausal women. All patients complained of scanty spotting from the genital tract, 10 of them had leucorrhoea, 6 had pain. The combination of all three symptoms was present in 2 patients. The average age of the patients was 54.1 years, the average age of menarche was 14.9 years, i.e., it was higher than in the population, the average age of menopause was 49.5 years, the average duration of the postmenopausal period at the time of the examination was 5, 6 years old The average number of pregnancies was 3.2, and none of the patients had primary infertility.
ThehistorydataisshowninFigure 1.

Figure 1. Anamnestic data of the studied patients.



None of the patients had a dramatic change in body weight during their lifetime. In the anamnesis of the examined patients, there were indications of inflammatory processes of the endometrium (in 8), endocervix (in 10), uterine appendages (in 6), vagina (in 6), numerous intrauterine manipulations, in particular artificial termination of pregnancy, diagnostic curettage, and in 4 patients - for the treatment of dysfunctional uterine bleeding. Recurrent symptoms were noted in 38 patients, 12 women were unsuccessfully treated in the past with 17-alpha-hydroxyprogesterone capronate for recurrent endometrial hyperplasia. Of the concomitant diseases, in addition to the "normal" age-related pathology, the most common was anemia of moderatese verity (26 women).

During the clinical examination, the patients did not reveal pronounced endocrine metabolic disorders: in 24 women - 0 points in relation to the I pathogenetic variant of hyper plastic processes, in 22-1 points, of which 10 were due to obesity, which was of a universal nature, in 12 - interstitial uterine myoma , the size of which did not exceed the size of the uterus at 7 weeks of pregnancy. Gynecological examination revealed uterine fibroids in 12 patients, adhesions in the uterine appendages in 6 patients, prolapse of the vaginal walls and cervix in 4 patients. All information is shown in Figure 2. See Figure 2 below.



In the rest of the patients, no pathology was detected during gynecological examination. The pupil symptom was absent in all patients. In 28 women, hyperemia and polyposis of the urethra were also noted. Cytological examination of vaginal smears revealed I-II reaction of the vaginal epithelium in all patients, however, cytological examination of aspirate and lavage from the uterine cavity revealed proliferation of the glandular epithelium in all 46 patients, of which 10 were pronounced. In addition, 10 out of 46 patients had individual signs of cellular atypia. In the contents of the uterine cavity in 16 patients, elements of inflammation (macrophages, histio cytes, cells in a state of lysis) were also determined; in 12 patients, structure less masses and elements of cellular decay.

During hysterography in 28 out of 46 patients, an x-ray picture was obtained, characteristic of a hyperplastic process in the endometrium - unevenness, serration of the contours of an unincreased, and sometimes slightly reduced, uterine cavity. Against this background, 8 patients had more pronounced filling defects. Hysteroscopy with separate diagnostic curettage was performed in 32 patients. When determining the indications for hysteroscopy, the results of previous diagnostic curettage and our studies were taken into account. With the help of hysteroscopy in 24 patients, a thin endometrium was revealed throughout, in 4 - small polyposis growths, in 4 - endometrial polyps against the background of atrophic mucosa. Given the absence of clinical and laboratory signs of hyperestrogenia, as well as the identified signs of the inflammatory process in 28 patients, we assumed that in the rest of the women, the cause of endometrial epithelium proliferation is a chronic inflammatory process of the endometrium. In this regard, all 46 patients underwent local and general treatment with drugs that have anti-inflammatory, reparative and anabolic effects. For local application in the form of intrauterine instillations, dimexide

dimethyl sulfoxide, enzyme preparations (chymotrypsin, lidase, RNase, Dnase), hydrocortisone were used. In the absence of contraindications, patients were prescribed prodigiosan intramuscularly. To stimulate anabolic processes in the endometrium, anabolic steroids or cyclic hormone replacement therapy were used in compliance with dosages corresponding to the level of hormones in the natural menstrual cycle.The course of treatment consisted of 8 intrauterine instillations, carried out every other day, injections of prodigiosan on the same days. Anabolic steroids or cyclic hormone therapy was continued up to 3 months. The clinical effect was evaluated 2 weeks and 3 months after the end of instillations. At the same time, control studies were performed: after 2 weeks, a cytological examination of aspirate from the uterine cavity, and after 3 months, a radioisotope and cytological examination. All patients received a positive clinical effect. During the first control cytological study, the following results were obtained: proliferation of the glandular epithelium was preserved in 16 patients, of which 1 had a pronounced hyperplastic process, individual signs of cellular atypia were found in 4, elements of inflammation in 15, structureless masses and elements of cellular decay in 11 patients .

Thus, during the first control study, a decrease in the proliferative and stability of the inflammatory components was noted, but the frequency of cytological signs of cellular decay increased. During the second control cytological examination, the following results were obtained: proliferation of the glandular epithelium was preserved in 4 patients, elements of inflammation were found in 6, structureless masses and elements of cellular decay were found in 4 patients. Cytological signs of a pronounced hyperplastic process were not found in any of the patients. In 32 patients, no pathological changes were noted during cytological examination of aspirate from the uterine cavity. The results obtained by us allowed us to suggest a possible variant of the pathogenesis of endometrial hyperplastic processes, which has not yet been discussed in the literature. In the postmenopausal period, a regular age-related atrophy of the external and internal genital organs occurs. Under these conditions, all or almost all of the biological barriers that prevent the penetration of infection into the internal genital organs are impaired or absent. As a result, some postmenopausal women, especially those with a burdened gynecological history, are likely to develop chronic endometritis and endocervicitis against the background of atrophic endometritis and endocervix.Further development of this process, apparently, can go in different ways: a destructive purulent inflammatory process, often with the development of pyometra, or a long-term productive inflammatory process with degenerative-proliferative changes, impaired repair and differentiation of cellular structures. It cannot be ruled out that the data obtained by us and other authors on the proliferative activity of the glandular epithelium in a significant proportion of postmenopausal patients with histologically established endometrial atrophy are explained precisely by degenerative-inflammatory changes. It is known that the long-term existence of actively proliferating cells, in this case, endometrial cells, regardless of the cause that caused the proliferation, facilitates the implementation of a hypothetical oncogenic factor. It is clear that therapy with drugs with progesterone-like action can be effective only if the proliferation is caused by hyperestrogenia. If proliferation is caused by an inflammatory process against the background of atrophy, progesin therapy, in our opinion, is not justified, since it exacerbates degenerative-catabolic processes in the endometrial epithelium.

Based on all of the above, we can assume the following stages in the development of hyperplastic processes in post menopause against the background of endometrial atrophy:
1) atrophy of the endometrium and endocervix
2) chronic atrophic endometritis and endocervicitis, in which elements of
inflammation and some proliferation of the glandular epithelium are determined cytologically
3) pronounced proliferative changes with the formation of micropolyps;

hysteroscopy in these cases reveals atrophy and polypoid areas of the endometrium, cytological examination - a pronounced proliferation of glandular epithelium, hysterography - signs of a hyperplastic process, 4) polyps of the endometrium or endocervix.

Cytological diagnosis of a polyp or polypous hyperplasia against the background of endometrial atrophy is very difficult, since in these cases the same cytological picture is observed as in nonspecific endometritis. The proof of the validity of our proposed explanation of the pathogenesis of endometrial hyperplastic processes in post menopause is the high efficiency of our treatment.

CONCLUSION.

Thus, in some postmenopausal women with bloody discharge, cytological, radiological and endoscopic signs of a hyperplastic process in the endometrium, apparently, are due to inflammatory and degenerative changes. Progesterone therapy is not indicated for such patients, as it exacerbates the degenerative-catabolic processes in the endometrium. Pathogenetically substantiated and effective is the use of drugs with anti inflammatory and reparative-anabolic action. Effective treatment of hyperplastic processes of the endometrium, developing against the background of its atrophy, can be the prevention of cancer of the uterine body.

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SAMPLE OF N. DAVKARAEV'S MUSICAL DRAMA "ALPOMISH”

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ANNOTATION. *The article deals with the musical drama "Alpomish" based on the epic "Alpomish" of the Karakalpak people, written in 1942 by the famous scientist N. Davkaraev.*

KEYWORDS: Literature, history, folklore, drama, epic, example, music, theater

In Karakalpak literature, the role of peoples in the development of the field of drama has become even more significant. Major representatives of Karakalpak drama Kasim Avezov, Abdiraman Utepov, Seyfulgabit Majitov used this experience in Karakalpak drama.
He came in with dramas such as "On the Way to Wish", "The Girl Who Found Her Peer", "Doubt", and "Bogdagul", and the development will be even better. At the same time, A. Begimov and M. Daribaev made their contribution. In 1942, the staging of the musical drama "Alpomish" based on the epic "Alpomish" by the famous scientist N. Davkaraev, based on the epic of the Karakalpak people "Alpomish". This left an indelible mark on the cultural history of the Karakalpak people, as the musical drama "Alpomish" is a folklore, which during the Great Patriotic War inspired the workers and contributed to the further improvement of friendship between peoples. In 1961, the musical drama resumed.
The musical drama "Alpomish" by N.Davkaraev was written in the years before the war, but was not staged.

The play was published in 1940, "Vozrojdennyynarod".
The first collection of the collection was published.
Later, in 1970, N. Davkaraev's works were collected in full and published in the first collection. N. Davkaraev's "Alpomish"

He worked hard on his musical drama.
In the drama "Alpomish" he takes into account the peculiarities of the epic, its beauty, and the idea of uniting the seeds of its ideological meaning without repeating the epic. The musical drama begins with a nomadic conflict in which Boysari Khan cannot bear the pain of his brother-in-law. The movement of the protagonists develops in a continuous movement around this conflict. Based on the plot of the author's dramatic work, it clearly shows the importance of the unity of the protagonist and the conflict. The reunion of Alpomish's descendants, his rescue of his father and mother from the sufferings of Taychikhan, and his search for his beloved wife Barchinoy are realistically portrayed as defending the country.
Alpomish drama consists of 4 acts, 8 paintings. The drama begins with the opposition of the oppressed people to the plight of the land of the rimsingBoysari. The author does not describe the story so effectively in this epic, because in the musical drama Boysari's displacement, resistance, is widely described, and the girls 'and boys' game "Aykulash" takes place.

We see that craftsmanship enriches folklore with folklore.
For example:
Guys; -Aykulashaykulash
Open your arms to the moon

Girls: What else do you need besides the moon?
Baysari's addition to the epic Alpomish, which is the symbol of Gulbarchin's veil in the musical theater, is unknown to Alpomish.
The events of Toychikhan's land take their place in the musical theater, and the image of Ayim, who does not appear in the epic, is provided. For example, the agreement on Alpomish's death in a drunken state, the feasts after coups in Toychikhan's country, Alpomish's overthrow, and Karajon's link. When the bride brought samples of Karakalpak folk tunes, for example, the bride's greetings were recited. The Karakalpak people have completed one of their programs, which is to greet the bride.
In conclusion, N. Davkaraev made an unforgettable stamp on Karakalpak drama, taking into account the interdependence of literature and folklore, based on this musicaldramatic work.

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CLASSIFICATION OF NAMES OF TASHKENT CITY NEIGHBORHOODS

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ANNOTATION: *This article is devoted to the problem of classifying the names of Tashkent mahallas in the late XIX - early XX centuries. Eight groups of neighborhood names were analyzed to show the origin of these groups of toponyms. There is also information about the names of such mahallas as Gulbozor, Degrez, Samarkand Darboza, Chukurkoprik, Chuvalachi. By studying the naming of Tashkent mahallas, it is possible to obtain valuable historical information about the city's past.*

Keywords: city, history, more, guzar, neighborhood, geographical feature, names, toponyms

INTRODUCTION: The accumulation of centuries of experience and their transmission from generation to generation has led to the formation of traditional mahallas, guzars, dahas and mahallas. These are a unique form of self-government, typical of the structure of cities and villages in Uzbekistan. Over a long historical period, the type of community self-government has shown that it is vital. In the "Old City" part of Tashkent, in the historically formed mahallas, in the districts consisting of private houses according to the plan since the second half of the XIX century, in the neighborhoods of multi-storey residential buildings, neighborhoods, neighborhoods and other traditions are still preserved. they are enriched with new features in line with modern requirements [1].

Place names have a special place in the history of Tashkent. After all, they appeared in the territory of the city during different historical periods and were formed in connection with its nature, past, population, political, economic, social, cultural and spiritual life. In particular, by studying the names of Tashkent mahallas, it is possible to obtain valuable historical information about the city's past. In general, it can be said that the mahalla is an administrative unit consisting of a complex of apartments in the city, which includes a certain number of inhabitants, and it began to take shape during the formation of the city. Initially, such divisions were mainly related to the social stratification of the population, but later they were also organized according to the occupation of the population.

The formation of the neighborhood was also influenced by the geographical features of the place. For example, concentration near water, zoning due to cliffs. Along with the increase in urban population, the emergence of neighborhoods was influenced by ethnic processes, and in connection with topographic changes - various devices, institutions and so on.

The main part. The development of the city is reflected in the changes in the composition of its neighborhoods. In particular, at the end of the 19th and the beginning of the 20th centuries, there were 50-150 apartments in one mahalla in Tashkent; sometimes, a common center for several neighborhoods was the guzar, which housed handicraft workshops, a teahouse, a bakery, a grocery store, and a bazaar. Guzars are located on major streets or intersections. Neighborhoods are divided into several sections or streets - relatively small streets as a main street and several narrow streets. The boundaries of the neighborhoods pass through the back walls of most homes. The neighborhoods in the city center were much older, and new ones were added on the outskirts, and over time, some of them developed and became independent.

This process is also reflected in the toponyms: 1-Eshonguzar, 2-Eshonguzar, Upper Oqmasjid, Lower Akmasjid, Big Kamalon, Small Kamolon mahallas. In many cases, thereare neighborhoods around the city, which are called "neighborhood", "garden-yard", "country-yard". In 1876, N.A. Maev wrote that there were 149 mahallas in Tashkent and recorded their names by districts; Of these mahallas, 48 belong to Shaykhantahur, 38 to Sebzor, 31 to Kokcha, and 32 to Beshogoch district [1]. However, the number of mahallas was probably higher, because in the early twentieth century in the old city, according to N.G. Mallitsky's list, there were about 280 mahallas, more than 170 neighborhood names [2]. Of them, 70 mahallas and 31 mahallas belonged to Shaykhantahur, 79 mahallas and 64 mahallas to Sebzor, 56 mahallas and 43 mahallas to Kokcha, 76 mahallas and 36 mahallas to Beshogoch.

CONCLUSIONS: In general, the names of the Old City mahallas in the late XIX -early XX centuries can be divided into eight groups in terms of content:

1. Toponyms related to professions and social groups of the population. For example, Degrez, Egarchi, Etikdoz, Temirchilik, Qazikocha, Kulkocha, Khojakocha mahallas and others.
2. Toponyms associated with a natural-geographical object. For example, Kattahovuz, Almazar mahallas.
3. Names associated with relief. For example, Kurgantepa, Oktepa mahallas and others.
4. Toponyms named after city gates. For example, Takhtapul, Samarkand Darvoza mahallas.
5. Toponyms related to the street, mosque, cemetery, market, etc. in the neighborhood. For example, Eskijuva, Chukurkoprik, Gulbozor mahallas.
6. Named after a historical person, i.e. anthropotoponyms. For example, Zangiota neighborhood.
7. Related to ethnic unity, i.e. ethnotoponyms. For example, Kashgar, Chuvalachi mahallas and others.
8. Toponyms related to historical reality. For example, Janggoh, Shoxnishintepa mahallas and others.

Occupational toponyms are relatively common among neighborhood names, and this is due to the concentration of people engaged in a particular type of occupation in a given neighborhood. For example, in Attorlik mahalla there were mainly sellers of Attorlik goods, in Zargarlik mahalla there were jewelers, in Taqachi mahalla there were takasozs. Next in line are the names given to the people living in the neighborhood according to a certain social class, tribe, clan. Toponyms such as Eshonguzar, Kulkocha, Tojikmahalla, Chuvalachi can be shown. This is due to the political and social changes that have taken place in the life of the city throughout history, the location of the population on the basis of tribal traditions. For example, in Eshanguzar mahalla - eshons, in Khojamahalla - a region inhabited by relatively more families belonging to the class of masters, and Kulkocha - an area inhabited by more slaves. Later, the social structure of the population of the neighborhood changed, but its former name, which has become a tradition, has been preserved.

Among the names of the neighborhood there are toponyms associated with the naturalgeographical object, relief. Researchers have noted that such toponyms are relatively ancient [3]. For example: Almazor and Sebzor - apple orchards are many neighborhoods, Qurghonteppa - means that there was once a fortress here, Chukurkuprik - Chukurkuprik is located around the bridge built on the lower reaches of the river means neighborhood. Among the old city neighborhoods are the larger device in the neighborhood area, the farm object, the toponyms named after the city gate, and among them are relatively more associated with religious institutions, monuments, city gates and markets. Kokmasjid mahalla - a mahalla with a blue dome mosque, Samarkand Darvoza - a mahalla named after the gate built on the city wall, Gulbozor - a mahalla with a market for flowers and seedlings.

Anthropotoponyms are less common among neighborhood names. They originated mainly in connection with the names of rich, aristocratic, officials, religious figures who lived in the neighborhood. In particular, Boltaboy, Badalboy, Shaykhantahur, Zangiota, Murad mahallas. The list of urban neighborhoods also includes toponyms related to a historical event, incident or. The history

of the emergence of such names is associated with a particular event. Shopayzikuloq mahalla - here a man named Shopayzi dug a canal ditch (ear) from the Kokcha canal [3].

The names of the mahallas of the old city also differ linguistically as they appear in different periods: Sogdian, Turkic, Persian-Arabic, mixed toponyms (Chochtepa, Qiyot, Chigatay, Darkhan, Registan, Obinazir, Bodak, Sebzor, Jartegirmon, Yangishahar Ganchtepa, Qazikocha, Sandiqbozor, Sobunbozor, etc.).

Below is an analysis of the names of some mahallas belonging to these groups: Gulbozor mahalla, the main part of which is in Shaykhantahur district; This mahalla was bordered by Qoshiqchilik mahallas of Khadra and Sebzor districts, Chorsu bazaar and Shaykhantahur street. The common toponym "Gulbozor" ("flower" and "market"), meaning "flower market". The reason for the name of the neighborhood is that there were stalls in the Chorsu market selling flowers and seedlings. According to archeological data, in the IX-XII centuries on this place the arch of Binkat and Shahristan were located. At the end of the 20th century, about 200 houses lived in Gulbozor mahalla. The population was engaged in trade, handicrafts (tin-making, gray weaving), gardening and farming in the districts of Nazarbek, Karasuv, Choponota. The neighborhood had three mosques, several rastas, a two-story hotel, and shops.

At the beginning of the 20th century, sewing machines manufactured by the German company Zinger were sold here in Degrez mahalla, Shaykhantahur district; Also known as Deroz and Degrezlik forms. It is bordered by Gishtmasjid, Sogalmasjid, Shortepa, Hovuzbog and Khojaroshnoi mahallas, and is divided into Lower Degrez and Upper Degrez. Now the National Theater of Uzbekistan and circus buildings are located here. The word "degrez" is a two-stem toponym ("deg" and "rez"), Persian "deg" - pot, "rez" - well; "Rextan" - means to pour; Although "degrez" means a potter, in general it means a neighborhood of blacksmiths. Degrez mahalla is one of the ancient mahallas, where 200 houses lived. The population was engaged in handicrafts and agriculture in the districts. His main occupation was casting of cast iron, brass, and abjoli (seven alloys). There were about 20 cast-iron pottery workshops (hammer teeth, sandstones, mortars), 2 mosques and a madrasa in the neighborhood [4].

Samarkand Darvoza mahalla, Beshogoch district; It borders Zangiota, Chakar, Zahariq, Kamalon mahallas, one end of which is adjacent to Chaqararik. It's still here. Samarkand Darvoza mahalla has mainly one-storey houses. One of the 12 gates of Tashkent - Samarkand Gate is located in the neighborhood. According to H. Hasanov, the name of the mahalla was formed from the name of Samarkand Darvoza [5]. The formation of this neighborhood dates back to the 15th century. At the end of the 19th century, more than 50 houses lived in the neighborhood. The population was engaged in handicrafts (tannery, carpentry, cart-making, etc.). He was engaged in agriculture in Novza, Choponota, Qaziravot districts. There were schools, mosques, bazaars, grocery stores in the neighborhood. [6].

Chukurkoprik mahalla, Beshogoch district; It borders with Mirlar, Zangiota, Badrboy, Eshonguzar mahallas. My common toponym (“pit” and “bridge”) and means “bridge built in a deeper, lower place”. A neighborhood was gradually formed in this area, which was called the bridge. By the way, the name of the canal flowing from this mahalla was Chukurkoprik, which flows through Beshogoch and Shaykhantahur districts of the old city. At the beginning of the 20th century, more than 300 houses lived in the Chukurkoprik mahalla. The population was engaged in handicrafts, gardening and farming in the neighborhoods. There was a school, several sewing workshops, teahouses, a mosque, and shops in the neighborhood.

Chuvalachi mahalla belongs to Sebzor district, borders with Teshik Kafka, Chigitboshi, Kaduvot, Hasanboy mahallas. According to S. Karayev, the word "Chuvalachi" is an ethnotoponym and means

the name of the Uzbek tribe [8], the name of the neighborhood is associated with the Chuvalachi tribe. There is no information about this in written sources. Probably due to the fact that the Chuvalachi tribe lived in the neighborhood, it was called "Chuvalachi". The neighborhood was formed around the XV-XVI centuries. At the beginning of the twentieth century, more than 100 houses were inhabited. The population was engaged in handicrafts, more - tannery, farming in their neighborhoods. Chuvalachi mahalla had a mill, several grocery stores, a teahouse, and a mosque.

Conclusion. The accumulation of centuries-old experiences and their transmission from generation to generation has led to the formation of traditional mahallas, guzars, dahas and mahallas. These are a unique form of self-government, typical of the structure of cities and villages in Uzbekistan. Over a long historical period, the type of community self-government has shown that it is vital.

As the names of Tashkent mahallas appear in different historical periods, they are divided into different groups in terms of periodicity, linguistics and content. It is safe to say that our architectural heritage is an inexhaustible treasure. Some neighborhoods are poorly studied, some are well studied and in need of rehabilitation. By studying the naming of Tashkent mahallas, it is possible to obtain valuable historical information about the city's past.

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