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**SCIENTIFIC IDEAS OF YOUNG
SCIENTISTS**

**POMYSŁY NAUKOWE MŁODYCH
NAUKOWCÓW**

**НАУЧНЫЕ ИДЕИ МОЛОДЫХ
УЧЕНЫХ**



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AGRICULTURAL SCIENCES

ИССЛЕДОВАНИЕ ВЛИЯНИЯ НОВОГО ХЛОПКООЧИСТИТЕЛЬНОГО АГРЕГАТА НА ФИЗИКО-МЕХАНИЧЕСКИЕ СВОЙСТВА ПРЯЖИ

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Аннотация: В результате практических исследований вертикальной технологии очистки хлопка-сырца получены результаты улучшения показателей физико-механических свойств пряжи

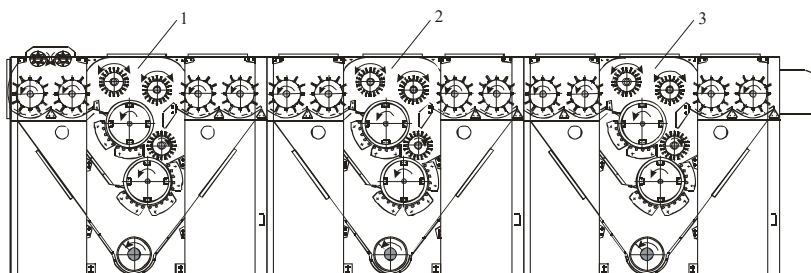
Ключевые слова: очистка хлопка, хлопкоочистительный агрегат, физико-механические свойства пряжи, линейная плотность, крутка.

Введение. При транспортировке пневмотранспортом из бунтовых площадок хлопка применяются стационарные перевалки, где, в связи с длинными дистанциями для обеспечения полноценного напора в трубопроводе отделяется хлопок от воздуха и повторно подается на другой трубопровод. Далее хлопок очищается на агрегате УХК горизонтальной компоновки (рис.1). Размеры перевалки составляют 12х6 метров, где имеются сепаратор СС-15А и циклон для очистки запыленного воздуха.

Предлагаемый вариант технологии очистки хлопка (рис.2) 1 и 2 сорта, I и II класса работает следующим образом [1]: из зоны заготовки хлопок поступает в 1 сепаратор СС-15А, где отделяется от воздуха, и подается на очистители хлопка-сырца с вертикальными секциями очистки от мелкого и крупного сора 2. Ленточным транспортером очищенный хлопок-сырец подается наклонным транспортером для джинирования в джинный цех.

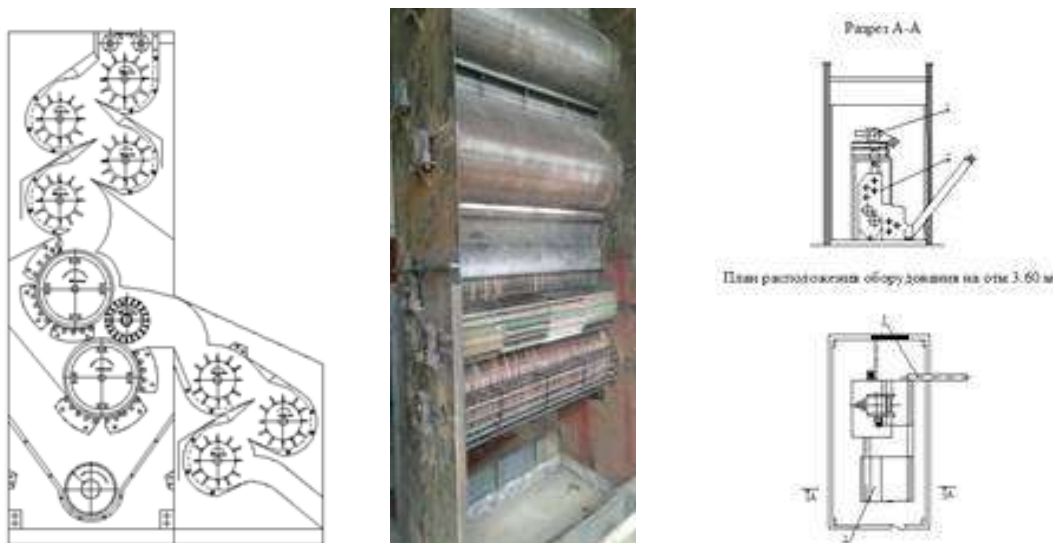
На эксплуатируемом агрегате УХК расход электроэнергии составляет 64 кВт/час, а в предлагаемом варианте этот показатель равен 19 кВт/час, количество колковых барабанов сократилось с 20 до 8, металлоемкость сократилась на 60%, также уменьшаются эксплуатационные расходы.

При проведении производственных испытаний очистителя с вертикальными секциями очистки хлопка-сырца от мелкого сора было переработано 15 тонн хлопка-сырца селекционной разновидности Порлок-1, I - сорта 1 - класса и I - сорт 2 - класс ручного сбора. Начальные показатели качества хлопка-сырца были следующие: засоренность 2,98% и 6,42%, влажность 8,16% и 8,67% соответственно.



1- УХК. 01. - питающие валики начальной секции; 2- УХК. 02.- две промежуточные секции: 3- УХК. 03. - заключительная секция.

Рис.1 Схема агрегата очистителя хлопка-сырца УХК



1.Сепаратор СС-15А; 2. Очиститель хлопка-сырца с вертикальными секциями очистки от мелкого сора; 3.Наклонный транспортер.

Рис.2 Схема, общий вид агрегата с вертикальными секциями очистки хлопка и технологическая схема на стационарной перевалке

Экспериментальные исследования по данной работе проводились в условиях учебно-производственной лаборатории кафедры "Технологии прядения" Ташкентского института текстильной и легкой промышленности на современном технологическом оборудовании фирмы "TRUIZSCHLER" и "ZINSER" (Германия). Трикотажная пряжа линейной плотностью 18,5 текс, была выработана согласно плану прядения и технологическим режимам кольцепрядильной машины, её качественные показатели были сопоставлены с нормами O'z DSt 2321:2011.

Физико-механические свойства пряжи линейной плотностью 18,5 текс приведены в таблице 1.

Таблица 1

Показатели физико-механических свойств пряжи

№	Показатели	O'z DSt 2321:201 1	Результаты	
			Существующая технология	Экспериментальный способ
1	Линейная плотность пряжи, текс	18,5	18,52	18,49
2	Номер метрический	54,0	53,99	54,08
3	Коэффициент вариации по линейной плотности, %	Iс- 3,8 IIс- 5,0 IIIс- 6,2	1,03	0,9
4	Разрывная нагрузка, сН	-	213	227,7
5	Коэффициент вариации по разрывной нагрузке, %	Iс- 13,8 IIс- 16,2 IIIс- 18,8	9,4	8,0
6	Относительная разрывная нагрузка, сН/текс	Iс- 11,5 IIс- 10,6 IIIс- 9,8	11,74	12,3
7	Удлинение, %	-	4,50	4,95
8	Крутка (кр/м)	881	868(Z)	880(Z)
9	Коэффициент крутки	37,9	37,3	37,84
10	Показатель качества	Iс- 0,83 IIс- 0,66 IIIс- 0,52	1,89	2,53
11	Обрывность на 1000 верчас	-	78	62

Средние результаты основных показателей физико-механических свойств пряжи всех вариантов приведены в таблице 5. Линейная плотность пряжи и коэффициент вариации по линейной плотности определены на USTER AUTOSORTER 5. Прочностные показатели и показатели, взаимосвязанные с ними определены на USTER TENSORAPID 4. Пряжа всех вариантов отвечает требованиям O'z DSt 2321:2011 [2] для I сорта.

Анализ физико-механических свойств трикотажной пряжи линейной плотностью 18,5 текс показал следующее:

Показатели селекционного сорта Порлок 1, очищенного предлагаемым способом, отвечают всем требованиям O'z DSt 2321:2011 для I сорта.

При проверке пряжи предлагаемого варианта относительная разрывная нагрузка составила 12,3 сН/текс, а квадратичная неровнота - 8,0%, эти показатели соответствуют I сорту. Основной характеристикой готовой пряжи является показатель качества [3], составивший при существующем способе 1,89, а при предлагаемом способе - 2,53, превысив, таким образом, нормы для I сорта. Число обрывов приходящихся на 1000 веретен составило при существующем способе 78, а при предлагаемом способе 62.

Делая вывод, необходимо отметить тот факт, что получить такие показатели удалось благодаря правильной подготовке волокон к процессу прядения, грамотной настройки технологического режима машин, контролю за всеми технологическими процессами от волокна до пряжи в течении всего периода

испытаний.

В целом процесс переработки хлопкового волокна селекционного сорта Порлок-1 на оборудовании фирмы "Trutschler" и "Zinser" (Германия) проходил стабильно. Качественные показатели пряжи, превышая требования для I сорта O'z DSt 2321:2011, характеризуются высокими показателями их выработки на современном оборудовании фирм "Trutschler" и "Zinser" (Германия).

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CHEMICAL SCIENCES

ПОЛУЧЕНИЕ НОВОГО АДСОРБЕНТА НА ОСНОВЕ НЕФТЯНЫХ ОТХОДОВ

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Аннотация. В данной работе приводятся материалы по получению адсорбентов из смеси асфальта и кокса.

Ключевые слова: кокс, бензол, адсорбент, абсорбат, адсорбция, десорбция, изотерма, объёмы микропор, асфальт.

В связи с бурным развитием химической промышленности возрастает необходимость внедрения ресурсосберегающих и безотходных технологий, а также с точки зрения экологии повышаются требования к безопасным адсорбентам. Кроме того, большое значение для экономики страны имеет производство эффективных, нанопористых и высокоселективных адсорбентов из отходов нефтегазовой промышленности, а также их использование для решения экологических проблем. Среди адсорбентов активные угли существенно отличаются по площади активной поверхности и структуре пор от каолина, активированных бентонитов [1] и модифицированного монтмориллонита [2, 3]. В связи с этим были проведены научные исследования по очистке промышленных сточных вод адсорбентами на основе активированных углей, полученных различными методами и различным местным сырьем [4].

Угольно-минеральные сорбенты, сочетающие полезные свойства минеральной матрицы и активных углей, являются перспективным материалом для очистки от коллоидных и молекулярно растворенных веществ. Известны способы получения угольно-минеральных смешанных сорбентов для очистки различных веществ путем нанесения кокса на инертный носитель, в частности способы получения адсорбента для очистки воды путем нанесения углеродсодержащего компонента на окись алюминия, перлит или другой неорганический носитель с последующей термической обработкой композиции при высоких температурах. В качестве минеральной матрицы могут быть использованы монтмориллонит и палыгорскит - типичные представители, соответственно, слоистых и слоисто-ленточных силикатов, а органическим веществом, наносимым на их поверхность - сахароза [110].

Углеродные сорбенты были получены методом щелочной активации; способ получения сорбентов из работ [5]. При получении сорбентов использовали низкочольный уголь с размером частиц 0,2-0,5 мм, а в качестве щелочного реагента-порошок гидроксида калия. Смешение угля и щелочи проводили при массовом соотношении щелочь/уголь $R_{\text{KOH}} = 1$ г/г. подробное описание процесса получения углеродных сорбентов из угля Кузбасса приведено в работе [6].

В приведенных выше данных щелочи были использованы для повышения активности угля и проведения экспериментальных испытаний по очистке сточных вод предприятий по производству активированных углей нефтепродуктов и получены положительные результаты.

Сегодня нефтеперерабатывающие заводы во всех регионах страны имеют большие запасы нефтяного кокса и асфальт. В частности, на Ферганском нефтеперерабатывающем заводе при анализе химического состава и структуры кокса и асфальт из нефтяных остатков физико-химическими методами стало известно, что свойства активированного угля частично продемонстрированы. Исходя из этого, кокс и асфальт смешивали в соотношении 1: 1.

Для удаления органических и других добавок из кокса и асфальта его нагревали пиролизом при 400°C в течение 2-3 часов. Первоначально небольшие количества углеводородов в смоле расщепляются и удаляются. Через несколько часов кокс и смола соединяются, образуя уголь, который очищается от дополнительных соединений.

Полученный уголь нагревают еще в течение 5-6 часов с использованием водяного пара до 800-1000°C для повышения активности. В то же время при нагревании до 400°C соединения, которые не покидают содержимое, продолжают выходить наружу. В угле образуются дополнительные соединения и микропоры. Образование пор указывает на образование сорбционных объемов.

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MEDICAL SCIENCES

FORENSIC CHARACTERISTICS OF DEFECTS IN MEDICAL CARE

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Annotation. In this paper, we have studied the defects in medical care that are allowed by medical professionals of various specialties at various stages of medical care. It was found that the greatest number of defects were made at the stage of providing care in hospitals (80%). At the same time, the maximum number of defects was in obstetricians-gynecologists, surgeons, and resuscitators.

In outpatient settings, erroneous actions of doctors were noted in 14% of cases. Specialists who most often made defects at this stage: General practitioners, gynecologists, pediatricians.

Keyword. defects in medical care, forensic medicine

In recent years, there has been an increase in the appointment of commissions for forensic medical examinations conducted in cases of professional violations of medical workers based on criminal cases. In a significant number of cases, various shortcomings and defects are detected that lead to the development of an unfavorable outcome [4].

Special attention is also paid to the issues of standardization in the provision of medical care, which is necessary to determine the scope and nature of medical care provided to the patient [1].

Conducting research and analysis of defects in the provision of medical care in General is an extremely important task. Based on the results of this analysis, it is possible to find out the causes of their occurrence and develop a set of measures to prevent these consequences [2; 3].

The purpose of the study was to analyze defects in the provision of medical care in medical institutions of the Republic of Uzbekistan.

The material was the annual reports of the departments of repeated and commission examinations of regional branches for 2018.

The distribution of Commission forensic examinations by the nature of defects in the provision of medical care in accordance with specialists of a narrow profile was as follows. The leading position is occupied by obstetricians and gynecologists-17%. The second place is occupied by pediatricians-12 %. A fairly large proportion of defects were observed in intensive care (10.5%) and surgical practice (6.6%).

Defects in the provision of medical care, as a rule, were multiple and were allowed at several stages of the treatment process in one patient.

It was found that the greatest number of defects were made at the stage of providing care in hospitals (80%). At the same time, the maximum number of defects was in obstetricians-gynecologists, surgeons, and resuscitators.

In outpatient settings, erroneous actions of doctors were noted in 14% of cases. Specialists who most often made defects at this stage: General practitioners, gynecologists, pediatricians.

Diagnostic defects accounted for 57%. More often than others, incomplete and insufficient examination was noted among surgeons, pediatricians and gynecologists. At

the same time, insufficient and untimely examination of the patient, incorrect interpretation of clinical data, and untimely diagnosis were most often noted.

Of the tactical defects, the largest number was revealed in the form of an incorrect assessment of the status and an incorrect prognosis of the course of the disease or pathological condition.

Objective factors that most often complicate the provision of medical care were: 1) the severity of the disease or injury 2) the presence of chronic diseases or infections.

Defects that contributed to the onset of death and led to long-term health problems were more often the following: delayed diagnosis, inadequate therapy, late hospitalization, early transfer from the intensive care unit, as well as insufficient monitoring and monitoring of patients that led to delayed medical care.

Conclusions. Defects in the provision of medical care in the form of late diagnosis, improper treatment, and untimely hospitalization lead to long-term health disorders, permanent disability, and death.

In a significant number of cases, treating physicians did not comply with national standards and clinical protocols.

Defects in the provision of medical care are allowed at different stages of the treatment process in one patient.

The greatest number of defects is observed at the stage of surgical and conservative treatment.

To improve the quality of medical care and increase the efficiency of forensic examinations in cases of medical care defects by medical professionals, it is necessary to develop modern approaches to the forensic assessment of medical care defects at all stages of medical care, to study the impact of medical care defects on the thanatogenesis of the disease (injury) and the onset of an unfavorable outcome.

To improve the quality of medical care, it is necessary to establish interaction with health authorities to identify and analyze defects in medical care through clinical and anatomical conferences.

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A METHOD TO IMPROVE THE FIXATION AND STABILIZATION OF COMPLETE DENTURES ON THE UPPER JAW.

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Key words: prosthetic dentistry, complete denture, fixation and stabilization of dentures, atrophy of the maxillary tuberosity.

Prosthetics of edentulous patients is one of the most difficult and not yet fully understood problems of prosthetic dentistry (I.Yu. Lebedenko, E.S. Kalivradzhiyan, T.I. Ibragimov, 2005). The traditional and most common way to restore the dentition with complete secondary adentia is an implementation of complete dentures, which have been used for more than 150 years (S.A. Naumovich, A.M. Matveev, 2009). Many different techniques have been proposed in order to improve the fixation and stabilization of complete dentures, ranging from the magnets' usage (Astashina N.B., Kazakov S.V. et al., 2011) to implantation. Prosthetic treatment of elderly patients with a full absence of teeth and marked atrophy of the alveolar process presents particular difficulties. (Lebedenko I.Yu., Kalivradzhiyan E.S., 2005). One of those challenges can be fixation and stabilization of dentures on the upper jaw, complicated by atrophy of the maxillary tuberosities.

In this regard, we set the task of improving the fixation and stabilization of complete dentures on the upper jaw, complicated by the maxillary tuberosity's atrophy due to constructive changes in the basis of the complete denture, considering the anatomical and physiological features.

The purpose of the study was to assess the effectiveness of additional valves' implementation on the basis of the complete denture in the area of pterygopalatine canals on the upper jaw.

From 2017 to 2020, the department of hospital prosthetic dentistry of the Tashkent State Dental Institute examined 11 men and 6 women aged 54 to 68 years old with the full secondary edentulous of upper jaw, complicated by the atrophy of maxillary tuberosities. All these patients were previously prosthetic with complete dentures, but left unsatisfied with a quality of prostheses and their poor fixation. The patients refused from implantation due to their subjective and objective reasons. In that case, all of them were again provided with complete dentures on upper jaw on the basis of which additional valves were formed, despite the primary closing valve in the pterygopalatine canals.

The criterion for evaluating the effectiveness of the proposed method of improving the fixation and stabilization of dentures is a breakout force, measured by the dynamometer "Teclockdt-500". The silk thread was attached to the base of the removable denture in the area of 6 | 6 teeth with a composite material.

The mid-range results show that the proposed method of constructive changes in a denture's basis of complete denture of the upper jaw with edentulous, complicated by atrophy of the maxillary tuberosities gave a significant effect in increasing the fixation and stabilization of dentures.

Thus, the usage of this method is indicated for patients with marked atrophy of the maxillary tuberosities without fixing conditions or when they are significantly deteriorated. The method allows to improve the functional value of dentures, namely the fixation and stabilization of complete dentures, which also allows to overcome psychological and emotional difficulties during prosthetics.

APPLICATION OF MATHEMATICAL MODELING IN ASSESSING AND ANALYZING THE EFFECTIVENESS OF THE FUNCTIONING OF FIXED PROSTHETICS ON DENTAL IMPLANTS.

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Keywords: mathematical modeling, dental implants, orthopedic dentistry, prosthetics.

Today, the development of mathematical modeling is characterized by a dynamic expansion of the subject areas of their application. A demanded area of application of mathematical modeling is solving the problem of choosing a rational dental treatment for a patient, taking into account the peculiarities of the state of the dentition. The use of information technologies and the implementation of their capabilities for calculating biomechanical structures of mathematical modeling systems is a promising, relevant and popular direction in the development of orthopedic dentistry.

In order to improve the quality of prosthetics with the use of dental implants, it is necessary to develop new treatment planning programs taking into account the existing experience and means of modeling the behavior of the dentoalveolar segments depending on the specific conditions of the patient's oral cavity. In addition, mathematical modeling is able to predict the receipt of technical solutions, which provides for their reasonable application in the future. The effective application of mathematical modeling methods in prosthetics is due to the development of computer technologies, which made it possible to obtain real results of calculating mathematical models of biological objects. The results of the analysis and study of biomechanical processes in the soft and bone tissues of the dentition, which determine the reliability of its functioning, showed their direct dependence on the values of internal stresses and deformations arising from prolonged exposure to work loads, which is of great importance for further predicting the results of orthopedic treatment. The modern level of construction and analysis of orthopedic structures requires the solution of a large number of methodological issues of dental implantology based on the accumulated practical experience and theoretical knowledge. The study of the impact of non-removable orthopedic structures shows that the magnitude and direction of functional loads in them, as in biomechanical systems with different dentoalveolar schemes, cause a significant difference in the magnitude of the forces acting on the implants, and, accordingly, on the bone and adjacent tissues.

From the point of view of practical dentistry, it would be ideal to create a specialized program designed to solve exactly the task that determines the choice of future treatment, which would allow predicting the long-term results of orthopedic treatment with the use of dental implants on the basis of clinical and functional data.

The problem of developing treatment algorithms and, on their basis, mathematical modeling of biomechanical systems and predicting the effectiveness of dental prosthetics, taking into account their general physiological and structural features of the restored segments of the jaw, is urgent.

There are no less frequent works in which, using methods of mathematical modeling, the design of removable prostheses based on implants and biological tissues of the oral cavity is evaluated; assessment of the influence of the direction of implant placement on the strength characteristics of prostheses. Research in this direction is of great theoretical and practical importance, aimed at developing methods for determining the magnitudes

and patterns of stress redistribution towards those physiologically acceptable for tissues, since, first of all, this creates a normal working environment in the dentoalveolar system, preventing the emergence and development of pathological foci, in including restoring chewing efficiency up to 100%.

Based on the clinical and functional examination methods, such as laser Doppler flowmetry, gnathodynamometry, X-ray diagnostics, echoosteometry, certain results were obtained characterizing the degree of osseointegration of dental implants, as well as the effect of bridges on peri-implant tissues. In this regard, the use of mathematical modeling methods would make it possible in the short term to predict the functioning of prosthetic structures on dental implants.

Thus, the use of mathematical modeling methods is aimed at long-term prediction of the functioning of bridges on dental implants. According to experts, mathematical modeling of a long-term forecast depends on many factors. To increase the reliability and accuracy of the forecast, the mathematical model must include the main clinical and functional parameters of the dentition. In this regard, lifestyle indicators (bad habits, type of chewing, etc.) and the patient's somatic burden are also of great importance. To date, the issue of selecting the clinical and functional parameters of the patient to create an accurate mathematical model of the functioning of dentures based on dental implants remains relevant.

ОПРЕДЕЛЕНИЕ МОЛЕКУЛЯРНО-ГЕНЕТИЧЕСКИХ ОСОБЕННОСТЕЙ И ПРОФИЛАКТИКА ЯЗВЕННОЙ БОЛЕЗНИ ЖЕЛУДКА И ДВЕНАДАТИПЕРСТНОЙ КИШКИ

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Цель исследования. Определение молекулярно-генетических особенностей и профилактика язвенной болезни желудка и двенадцатиперстной кишки.

Материалы и методы исследования. В верификации ЯБ использованы результаты лабораторно-инструментальных (ФГДС) и молекулярно-генетических исследований. Исследования проводились на основе выборки больных возрасте от 20 до 84 лет, с язвенной болезнью желудка и двенадцатиперстной кишки 2019-2020 годах. Количество больных составляло 100 человек (с осложнением 49, без осложнения 51).

Результаты и обсуждение. В результате исследований гендерных различий по лабораторно-инструментальным и молекулярно-генетическим данным не было выявлено. В результате фиброгастродуоденоскопии (ФГДС) в основной группе наблюдения у большинства пациентов язвы были локализованы в луковице ДПК, без значимой разницы с группой сравнения и отмечались в основном эрозивно-язвенные поражения слизистой.

Анализ полиморфных вариантов противовоспалительного цитокина гена IL10 показал наличие гомозиготного мутантного генотипа A/A среди пациентов с язвенной болезнью ($\chi^2=0.02$; $P=0.9$; $RR=0.94$; $95\%CI$ 0.39-2.28; $OR=0.94$; $95\%CI$ 2.42-0.36). Наши исследования показывают, что полиморфный вариант противовоспалительного цитокина IL10 может быть связан с развитием язвенной болезни. Также по литературным данным, известно, что гены цитокинов относятся к числу основных генов-кандидатов язвенной болезни и играют важную роль в патогенезе язвообразования, что и подтверждает результат нашего исследования [7]. Полиморфизм генов, кодирующих цитокины, такие как интерлейкин 10 (IL-10) и рецептор интерлейкина 1 (IL-1RN), влияют на уровни секреции цитокинов и, по-видимому, способствуют риску развития гастродуоденальных заболеваний [3]. Цитокины обладают плеiotропным действием на иммунные и эпителиальные клетки, регулируя пролиферацию и дифференцировку клеток и модулируя секрецию других цитокинов, а также тип и степень воспаления. Хроническое длительное нерегулируемое воспаление слизистой оболочки желудка признано основным движущим механизмом, вызывающим повреждение тканей и ДНК, которое может привести к раку желудка [9]. В результате анализа полиморфного варианта гена PGC выявлена его ассоциация с риском развития ЯБ.

Заключение. Для язвенной болезни при фиброгастродуоденоскопическом исследовании характерно эрозивно-язвенное поражение желудка и двенадцатиперстной кишки. В ходе проведенного молекулярно-генетического исследования выявлена взаимосвязь полиморфизмов генов IL10 (G1C82A), PGC-1A(G/A) с язвенной болезнью.

COMPARATIVE INDICATORS OF IRON METABOLISM AND HEMATOPOIETIC TRACE ELEMENTS IN HEALTHY INDIVIDUALS, DEPENDING ON GENDER AND PLACE OF RESIDENCE

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MATERIALS AND METHODS. Assessment of the state of these microelements in the body of the elderly and elderly people, as well as comparative characteristics depending on gender and place of residence, as well as comparison with the data of young people give a complete picture of the microelement polydeficiency state, specifically determine the main factors for the development of this condition and develop an approach to management of these patients, diagnosis, treatment and prevention of microelement polydeficiency state in the studied category of persons.

RESULTS AND IT'S DISCUSSION. A comparative analysis of the results obtained on the exchange of iron and copper in urban and rural residents shows that practically significant differences were not observed in the exchange of iron between elderly men ($p > 0.05$) - respectively $15.2 \pm 0.76 \mu\text{mol} / \text{l}$ versus $15, 1 \pm 1.0 \mu\text{mol} / \text{L}$.

But, in women of this age, in the content of this trace element in the blood serum, noticeable differences were observed; the indicators of urban women were higher than the parameters of rural women - respectively $12.2 \pm 0.56 \mu\text{mol} / \text{l}$ versus $10.9 \pm 0.51 \mu\text{mol} / \text{l}$ ($p < 0.05$).

Thus, the parameters of blood hemoglobin and serum iron in the elderly tended to change unidirectionally, both depending on age and depending on the place of residence. Moreover, in both cases, we observed a close, direct correlation, but with different strengths, the dependence is most clearly visible in the analysis of hemoglobin in all cases. In rural residents, regardless of gender, the parameters of hemoglobin and iron were markedly reduced.

The same tendency of changes was observed in the content of transferrin in the blood serum of the elderly. Among men, depending on the place of residence, urban residents had an advantage - respectively $2.85 \pm 0.04 \text{ g} / \text{l}$ versus $2.80 \pm 0.03 \text{ g} / \text{l}$ ($P < 0.05$), the same trend of changes was observed in women, where also the parameters were for women living in the city - respectively $2.50 \pm 0.02 \text{ g} / \text{l}$ versus $2.38 \pm 0.01 \text{ g} / \text{l}$ ($p < 0.05$).

Transferrin indices also correlated with the hemoglobin content of blood, but in contrast to the iron parameters in all cases, the correlation was almost the same - a close, direct, strong relationship - respectively $\rho = 0.79$ and $\rho = 0.74$ in men and $\rho = 0, 78$ and $\rho = 70$ for women.

The percentage of CST differed slightly in men depending on the place of residence ($23.4 \pm 1.1\%$ versus $22.2 \pm 0.9\%$, $p > 0.05$), but in women the difference was significant - $18.9 \pm 0, 9\%$ versus $17.0 \pm 0.3\%$ ($p < 0.05$). It is noteworthy that the direction of the changes was the same as in other indicators - the parameters of urban residents prevailed over rural ones, as well as the indicators of men over women ($p < 0.05$).

Indicators of ceruloplasmin, a copper transport protein in blood serum in the elderly, which reflects the state of metabolism of an essential trace element - copper in the body, had the same tendency of changes, although the strength of the correlation between blood hemoglobin was moderate and weak. If for men living in the city this parameter was $0.26 \pm 0.05 \text{ g} / \text{l}$, then for rural men it was significantly lower - $0.20 \pm 0.02 \text{ g} / \text{l}$ ($p < 0.05$). The same tendency of changes was observed in women - respectively $0.27 \pm 0.02 \text{ g} / \text{l}$ versus $0.19 \pm 0.03 \text{ g} / \text{l}$ ($p < 0.05$). Like all parameters of iron metabolism, the change in this parameter also related to the significant difference between the results obtained for urban residents and those living in rural areas, and this also applied to both men and women.

The content of iron in the blood serum was indicated above, but for a comparative analysis with other hematopoietic trace elements (copper, zinc), we presented the results of iron in this table.

Copper, one of the important hematopoietic trace elements, was determined in blood serum in different amounts in the elderly, depending on gender and place of residence.

For men permanently residing in urban areas, this indicator was $11.7 \pm 0.64 \mu\text{mol} / \text{L}$, while in rural men this parameter did not differ significantly and amounted to $10.8 \pm 0.64 \mu\text{mol} / \text{L}$ ($p > 0.05$). But in women, this microelement significantly differed depending on the place of residence - $10.8 \pm 0.64 \mu\text{mol} / \text{L}$, respectively, versus $9.5 \pm 0.44 \mu\text{mol} / \text{L}$ ($p < 0.05$).

There were no significant differences in the content of zinc in blood serum in all cases - for men ($17.6 \pm 0.80 \mu\text{mol} / \text{L}$ versus $17.0 \pm 0.34 \mu\text{mol} / \text{L}$), and for women ($16.6 \pm 0, 54 \mu\text{mol} / \text{L}$ versus $16.2 \pm 0.38 \mu\text{mol} / \text{L}$) - $P > 0.05$.

If we analyze the interrelated options with the place of residence of the elderly, it can be seen that mainly strong interrelated options are associated with rural men and women. This allows us to conclude that the greatest changes in hematopoietic microelements are subject to rural residents.

CONCLUSIONS. Thus, the analysis of indicators of hematopoietic microelements of blood serum in the elderly, depending on age and place of residence, shows that significant differences were found only in the content of iron and copper between urban and rural women, as well as in the content of copper among men living in cities and villages. In other cases, especially in terms of zinc content, no significant differences were observed. The results of the correlation analysis also confirmed the results obtained, where strong, interrelated variants were more often observed for iron and copper, and were also mainly found among rural residents. In addition, it should be emphasized that all the studied indicators had close, direct correlations between themselves.

СРАВНИТЕЛЬНАЯ ОЦЕНКА РЕЗУЛЬТАТОВ ХИРУРГИЧЕСКОГО ЛЕЧЕНИЯ ОСТРОГО ОСЛОЖНЕННОГО АППЕНДИЦИТА У ДЕТЕЙ

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Введения: Снижение заболеваемости острым аппендицитом во многом объясняется повышенным вниманием к различным предполагаемым этиологическим факторам, таким как гигиена, диета, сезонные колебания, инфекция, кормление грудью и генетический фактор [7]. Доля перфоративного аппендицита варьируется в широких пределах от 15 до 50% [8, 9] **Цель исследования:** провести сравнительный анализ результатов лапароскопической аппендэктомии при остром осложненном аппендиците у детей

Материал и методы. В исследование включены 250 детей с острым осложненным аппендицитом, оперированных с декабря 2012 по август 2019 г. (164 лапароскопических аппендэктомий, 60 открытых аппендэктомий и 26 конверсионных аппендэктомий). Большинство пациентов находилось в возрасте 13-17 лет (101 случай, 40,4%). Наиболее часто выявлен перфоративный аппендицит (47,6% случаев, 119 из 250). По распространенности в большинстве случаев имел место разлитой аппендикулярный перитонит (40,5%).

Результаты. Выявлена достоверно низкая частота ранних осложнений в группе лапароскопических аппендэктомий (15,2% против 56,7%; $p < 0,001$), как специфических (7,9% против 40%), так и общих (7,3% против 15%). Отмечена незначительная разница в отношении средних показателей продолжительности операции в пользу лапаротомий ($p > 0.05$), однако сроки нахождения в стационаре сократились на 5,4 суток при лапароскопии ($9,3 \pm 2,6$ против $14,9 \pm 3,2$ суток, $p < 0.05$) по сравнению с аналогичными показателями в группе традиционной аппендэктомии. Во втором периоде исследования (2016-2019 гг.) по сравнению с первым (2012-2015 гг.) удалось повысить долю хороших отдаленных результатов с 57,7% до 78,3% и снизить частоту плохих результатов с 9,2% до 2,5%.

Вывод. Совершенствование тактико-технических подходов и активное внедрение эндовизуальных технологий в хирургию острого осложненного аппендицита у детей позволило качественно улучшить диагностический этап верификации морфологической формы заболевания и характера сопутствующего перитонита и тем самым достоверно снизить частоту послеоперационных специфических и общих осложнений, и значительно увеличить долю хороших отдаленных результатов.

ПРИМУШЕСТВО ЭНДОВИДЕОХИРУГИИ ПРИ ХИРУРГИЧЕСКИХ ЛЕЧЕНИЯХ ОСТРОГО ОСЛОЖНЕННОГО АППЕНДИЦИТА У ДЕТЕЙ

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Введение

Острый аппендицит – наиболее распространенное хирургическое неотложное состояние в детской хирургии с риском развития в 7-9% и пиковой заболеваемостью в раннем подростковом возрасте. По последним данным заболеваемость аппендицитом составляет ~ 90 на 100.000 населения.

Материал и методы

С декабря 2012 года по август 2019 года в отделении хирургии у детей при остром аппендиците аппендэктомия была выполнена 250 пациентам (164 лапароскопических аппендэктомий (ЛА), 60 открытых аппендэктомий и 26 конверсионных аппендэктомий (КА)).

Большинство пациентов находилось в возрасте 13-17 лет (101 случай, 40,4%). Детей до 3 лет было 16 (6,4%), 4-7 лет – 61 (24,4%) и 8-12 лет – 72 (28,8%). Большинство пациентов были мальчиками – 171 (68,4%).

Наиболее часто выявлен перфоративный аппендицит, как в группе ЛА (48,4% случаев, 92 из 190), так и в группе ОА (45,0%; 27 из 60). По распространенности также в большинстве случаев имел место разлитой аппендикулярный перитонит, 40,5% и 38,3% в группе ЛА и ОА соответственно.

Результаты и обсуждение

Внедрение и активное использование лапароскопической техники хирургического вмешательства при различных формах острого аппендицита у детей способствовало снижению частоты как специфических – с 40% при ОА до 7,9% при ЛА, так и общих послеоперационных осложнений – с 15,0% до 7,3%. Так, в основной группе пациентов достоверно реже наблюдали нагноение послеоперационной раны (1,2% против 11,7% случаев) и, соответственно, эвентрации (0,0% против 6,7% случаев.).

Эффективность лапароскопической техники убедительно демонстрируется по таким критериям, как достоверное уменьшение случаев продолжающегося перитонита на 4,9% (с 6,7% до 1,8%) и ранней спаечной кишечной непроходимости на 4,9% (с 6,7% до 1,8%) у детей основной группы.

Кроме того, в этой группе больных отмечается некоторое снижение частоты послеоперационных абсцессов брюшной полости (с 5,0 до 3,0) и не наблюдается случаев внутрибрюшного и желудочно-кишечного кровотечения (в группе сравнения имел место один подобный случай). Эта положительная тенденция, наблюдаемая в основной группе пациентов, была характерна как для диффузного перитонита, так и для разлитого.

Заключение: Таким образом, внедрение в хирургию осложненного острого аппендицита у детей эндовизуальных технологий позволило качественно улучшить диагностический этап верификации морфологической формы заболевания и характера сопутствующего перитонита и тем самым снизить частоту послеоперационных специфических (внутрибрюшных и раневых) осложнений с 40,0% до 7,9% и неспецифических с 15,0% до 7,3%.

PHILOLOGICAL SCIENCES

DEVELOPING LEARNERS' SPEAKING THROUGH SIMULATION ACTIVITY

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Abstract. Nowadays, as knowing the language is identified by being able to communicate freely in a foreign language, more attention is being given to enhancing learners' language skills, especially speaking ability. The aim of this thesis is to find out, whether the simulation is beneficial enough to improve learners' speaking abilities.

Key words: simulation, speaking ability, convergent, divergent models.

Simulation is one type of drama activities, which is closer to role play but has some differences. Likewise a role play, it has not clear definition though there are some descriptions by authors. As for Dummett, in simulations learners have a chance to express their own opinions and views, while in role plays they are required to speak according to the prompts given in the role cards.[1]

According to Ladousse, any feature of language learning may appear in simulation, and it is good tool in advancing learners' discussion skills, as well as reading, listening, writing skills, language structure and especially vocabulary range.[2]

Furthermore, Scrivener sees a simulation as follows: "Simulation is really a large-scale role play". [3] Role cards are normally used, but there is often quite a lot of other printed and recorded background information as well newspaper articles, graphs, memos, new-flashes which may come at the start of the simulation or appear while simulation is unfolding, causing all participants to take note of the new data and possible readjust their positions. In short, simulation is a type of speaking activities that provide learners' with a chance to speak spontaneously, to get ready for the real world situations and to enhance learners' imagination.

According to Hyland, there are three valid reasons for using simulations in the process of teaching a second language at elementary schools.

1. Simulations influence on young learners quite positively, encouraging them to further learning. As we know children naturally are very interested in learning and finding out new things. If the learning process is enjoyable and appealing for them, they will be highly motivated in the process of learning a new language also.

2. They provide a convenient and safe environment for real communication in the target language in the classroom. They are involved to the interaction between pupils and sometimes a teacher about some topics and events.

3. Learners have a great exposure to meaningful and purposeful communication through simulations. For example, they may learn how to buy something or how to give directions, order in the restaurants which they possibly may encounter in life outside the classroom one day.

According to Christopher and Smith (1990), a language content in simulations can be divided into specified and unspecified, i.e. "convergent" or "divergent" models. Some of the main differences are presented below:

Convergent model

Divergent model

"This is the problem;
How shall we solve it?
The action has the "past"
Roles are given in detail.
The organizer processes the action.
Focus on "what will happen?"

"This is the situation;
What will we do?"
The action takes place "on stage"
Roles have no constraints.
No formal steps or sequences.
Focus on what the players do.

However, one should not forget that there are also some drawbacks of using simulation in class. For example, the teacher intervenes less in the process, and direct error correction is not recommended, these may give a chance to boost learners' mistakes in pronunciation together with reinforcing misunderstanding and misuse of some of the new vocabulary.

According to Hyland, there are four procedures in using the simulation in the class.

1. Preparation stage - as some students are somewhat introvert, meeting new friends, and making communication with them in an unfamiliar environment may be a frightening thing for them. So, in the first stage teachers should prepare learners psychologically, giving them more encouragement and confidence in the interaction with others.

2. Assessing stage - in this level the teacher should evaluate what learners are waiting from the lesson, and what are the things they are in need actually. This can be found out by asking learners themselves, they answer correctly indeed. As a result, the educator may be aware of learners' interests and needs much more clearly.

3. According to learners' interests and needs the teacher can choose or write an appropriate simulation now.

4. The last step in the preparation is designing a room and finding necessary resources. As we mentioned above, in simulations a real setting is required, so equipping the classroom with some media or technology is a very good idea.[4]

To sum up, simulation can be an effective way of stimulating students to speak more, and interact in the target language with each other during the classes. Simulation is too beneficial to develop speaking skill of learners irrespective their age and level only if they are chosen appropriately by teachers.

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ОСОБЕННОСТИ ИЗУЧЕНИЯ МОРФОЛОГИИ РУССКОГО ЯЗЫКА В НАЦИОНАЛЬНОЙ АУДИТОРИИ

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Аннотация. В статье рассматриваются подходы изучения морфологии русского языка в неязыковых группах средне-специальных учебных заведениях и определяются цели, которые преследует изучение морфологии в национальной аудитории.

Ключевые слова: интеллектуальное развитие, комплекс, языковая компетенция, логическое мышление, социокультурная особенность;

Изучению морфологии традиционно отводится наибольшее количество часов и времени. Это объясняется не только значительным объемом сведений о частях речи, определенных программой для усвоения, но и значимостью этого материала для интеллектуального развития обучающихся, для развития всех видов речевой деятельности.

Целями обучения морфологии являются:

- овладение сведениями о системе частей речи, о морфологических признаках частей речи как составляющих языковой компетентности обучающихся, как базе для формирования правильной и уместной речи;

- формирование комплекса учебно-языковых умений (нахождение изучаемых явлений в ряду других, группировка и классификация их, анализ изученных явлений, уместное использование в учебной речевой ситуации);

- развитие всех видов речевой деятельности: обучение чтению учебно-научных текстов на основе овладения приемами смыслового чтения; обучение слушанию путем применения приемов эффективного слушания; формирование умений учебно-научной речи на основе овладения умениями создавать тексты разных жанров, наиболее часто используемых в учебной деятельности - определение типа дефиниции, описательная характеристика, рассуждение;

- развитие логического мышления обучающихся в процессе формирования аналитических умений, овладение типовыми способами интеллектуальной деятельности;

- формирование деятельностной и социокультурной компетентности обучающихся, моральных и духовных ценностей личности.

Овладение языком как средством общения невозможно без знания морфологии и употребления частей речи. Поэтому в общей системе обучения русскому языку в национальной аудитории изучению частей речи отводится огромное место. Изучение частей речи на каждом этапе обучения имеет свои особенности в соответствии с принципом речевой направленности. В средних классах словоформы имен существительных, прилагательных, глаголов, числительных и местоимений усваиваются как структурные элементы предложения в процессе речевой тренировки при изучении главных и второстепенных членов предложения. Подобная речевая подготовка создает благоприятные условия систематизации знаний обучающихся о частях речи более содержательной и сложной форме, для глубокой и детальной отработки отдельных грамматических умений на синтаксической основе. Изучение частей речи тесно связано с другими разделами курса русского языка (лексикой, фонетикой, орфоэпией, словообразованием,

орфографией, синтаксисом). Связь частей речи со словообразовательной системой русского языка проявляется в соотношении словообразовательных моделей с частями речи. За каждой частью речи закреплены определенные словообразовательные аффиксы (-тель-, -изн-, - имена существительные; -ыва-, -ива- глаголы; -ан-, -ян- прилагательные). Практическое овладение русским языком означает, прежде всего, овладение синтаксическим строем русского языка. Усвоение структурных и смысловых особенностей разнообразных типов предложений и словосочетаний неотделимо от изучения частей речи. Главное - взаимосвязанное изучение морфологии и синтаксиса создает благоприятные условия для практического овладения изучаемой морфологической формой, дает возможность формировать и развивать синтаксические навыки обучающихся в процессе изучения частей речи. Изучая части речи, обучающиеся знакомятся со спецификой сочетаемости слов, относящихся к разным частям речи. Каждая часть речи усваивается как сложный лексико-грамматический разряд слов с присущими только ему морфологическими признаками и синтаксическими свойствами. Другим важным принципом обучения "Морфологии" является обучение всем видам речевой деятельности параллельно с изучением морфологических признаков. "Перед учителем русского языка встает методическая проблема: как оптимально осуществить в единстве изучение основ лингвистики и обучение таким видам речевой деятельности, как слушание, говорение, чтение и письмо" - акцентирует внимание Л.А. Тростенцова на актуальной до сегодняшнего дня проблеме - на формировании языковой и речевой компетентностей.

Задачи формирования языковой, речевой и коммуникативной компетентностей приводят к необходимости использовать оптимальные подходы к обучению морфологии и речевой деятельности. Таким подходом, с нашей точки зрения (и это неоднократно доказано экспериментально в исследованиях Г.А. Михайловской, В.И. Стативки, В.И. Бадер и др.), является взаимосвязанное обучение. В этой связи появляется определенная специфика при использовании познавательных методов (методов овладения знаниями: наблюдение и анализ языкового материала, беседа, слово учителя, лекция, чтение теоретического материала учебника) и практических (методов формирования умений).

В статье мы предприняли попытку назвать цели и главные принципы обучения морфологии в национальной аудитории, описать специфику познавательных и практических методов в процессе обучения морфологии. Надеемся, что она поможет учителю сориентироваться в выборе подхода к обучению.

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INFLUENCE OF LATIN LANGUAGE ON THE APPEARANCE AND DEVELOPMENT OF THE TERMS OF PLANT SCIENCE

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Annotation: this article is focused on the study of etymological content of the terms expressing plants and their different parts in English and it was determined that they belong to various languages. The article highlights the importance of Latin language, the quantitative index of which is in the leading part in the development of plant science.

Key words: linguistic, lexicology, etymological, descriptive, binary, nomenclature, classification, international.

Everything and every event in the nature have their origin and history of development. Thus, when the researcher is eager to choose a certain topic and highlight it by linguistic point of view, he/she will try to begin studying the history of the topic object, origin of his/her investigations. Therefore, before analyzing the English terminology of plant science scientifically, we consider to look through the history of its formation at first.

Thinking activity of a person is presented by words, i.e. "there is no thought including a concept that is present or can be present separately from a word. It is represented, registered, activated in any word or word groups, if no words are found the concepts are not realized as well." [1.65].

During his life a man named the initial concepts appeared in the result of his mind, all the things and events met in his life or related to his life directly in the way he wanted i.e. he named them in certain linguistic signs.

As it was determined in the investigations of terminologists or the scientists of lexicology in general, the linguistic units directly related to human life, daily activities are ancient and they differ with their permanence and undergo different linguistic changes very seldom. Lexical units expressing the tools of production, household items, affinal relationship, natural phenomena and others are among them" [2.19].

The object of our research is the terminology of plant science of English language, specifically the terms expressing a plant and parts of its body.

There is no doubt that terms expressing the concepts of plant science are ancient since the terms of a plant and its body parts are as old as the formation of a human as a person.

Every language has its vocabulary but not all the words in the vocabulary are original and were derived from other languages under the influence of definite circumstances. Therefore etymological dictionaries appeared.

The most ancient documents, evidences of the presence of plant science belong to the 4th century B.C. They were mentioned in the works of Aristotle and his pupil Theophrastus. In his book "Inquiry into Plants" about 480 types of plants were described. From Theophrastus' time up to the end of 17th century the plant science developed very slowly and mainly consisted of describing the types of previously unknown plants [3.15].

At the end of the 15th century and the beginning of the 16th century depicting images of new types of plants appeared and the words derived from foreign languages began to enter the dictionary of plant science of English constantly:

parietal (1506) - attached to the wall of a placenta

pollen (1523) - a mass of microspores in the seed plant

algae (1551) - photosynthetic organisms in the marine environment

genus (1551) - genetic term used for the classification of plants [4]

Creating binary nomenclature by Caspar Bauhin i.e. to name each plant with two

words means that the first name is for the type and the second for the sort of the plant. Carl Linnaeus helped to create the description of plants which was and is still of great importance in the science. Systematization of plants was created on the basis of Latin language by Carl Linnaeus due to some reasons. Latin language had an international character by obtaining a number of advantages as a science.

In the result of our investigations we came to the conclusion that the terms expressing plants and their body parts do not consist of wholly English and their etymology belongs to different languages. They are German, Latin, Greek, French languages and the words derived from Latin language compose the majority.

Introducing the Latin words to Britain started at the time of Old English and at that time words used to be derived not from classical Latin but widely spread folk Latin language. They were the words of military and rural sphere which had practical tasks and were necessary in daily life. Introduction of Christianity to England in 597 played an important role in political and cultural life of the country and it helped to gain Latin alphabet. In the period of Norman invasion plenty of words were obtained from Latin language. Most of the words gained from Latin into English (especially the terms of science and art) had been derived from Greek language by Romans.

Lots of books, works were written in plant science and other spheres in Latin language in the past and they haven't lost their value even today. Therefore "Latin language and Medical terminology" was inserted as a main subject into the curriculum of educational program of medical colleges, lyceums and especially Medical Institutes. This subject gives the opportunity to develop cultural- intellectual views of students and to use the medical terms in their professional activities effectively.

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PSYCHOLOGICAL SCIENCES

CHALLENGES ON UNDERSTANDING CHILDREN'S PSYCHOLOGY

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Abstract. This study explains the inevitable challenges that one finds on the way of understanding children's psychology. Raising children properly requires better comprehension of their psychology in the first place. Therefore, the researcher starts with defining children's psychology, both similarities and differences in it, then states the importance of treating them in the way they are supposed to be by their parents and teachers, proving his point of view with some statistical facts respectively.

Key words. Creativity, imagination, outlook, identity, mental, emotional, observation, control, prohibition, conflict, attention.

Introduction

At present time, there is a lot of research being done by experts in the field of children's psychology and their study. It should be noted that a full understanding and study of children psychology requires a lot of research and experience. In addition, child psychology is studied in several age groups. That is, at a certain age, a child begins to experience physical, emotional, mental and social changes are different for each age group.

Surprisingly, understanding and comprehending feelings, thoughts, ideas and imaginations of childhood is more complex than adulthood. The reason why every child has his or her own worldview is that they shape that worldview not through the outside world, but through their own colorful worlds and unique perceptions that adults find difficult to understand.

Similarities and differences in children's psychology.

In fact, children have a lot in common in their character, like similarities and connections. And experts assess their psychological changes in general and on an individual basis. That is, they have the same processes, the same situations. But on the other hand, every child has his own manner, personality and needs to be approached individually. That is why psychologists divide this process into two; general and individual.

There are many commonalities and similarities in young children, and these aspects that unite their psychology. So, first of all, children expect love and attention from their parents. As a result they start to try a lot for getting that attention, even if these actions are small in our eyes. Another similarity is "Care". It must be acknowledged that children, unlike adults and adolescents, are very caring for their loved ones, and can even give unparalleled love and care for the toys and animals which they value. So they try to help them as much as they can. Another common aspect is "Observation". Preschoolers and school-age children (up to 10 years old) carefully study and observe the events, people, objects around them, try to understand and as a result draw their own conclusions. It is at this age that children carefully observe the colors, sounds, shapes, relationships of each object or subject and remember most of them. As a result, they have the first thoughts and ideas about the world, the external environment, and about the family.

If we pay attention, children love to ask questions and talk about their ideas. According to statistics, under normal circumstances, each child is expected to ask about 900 questions a day. It is obvious that children have a very broad outlook, strong imagination and more "CREATIVITY" than other age groups. Significantly, they try to create, build, or invent something from an early age, and surprisingly, they do so from the first attempt. This is because they are more confident and confident in their goals than adults. They are not afraid of defeat, embarrassment, or misfortune, because they see themselves as the only heroes who can achieve their goals and dreams. Again, as mentioned above, they live more in their own worlds than in real life, and they enjoy this life more. Even children find solutions to their problems based on their imagination. They approach each case through their little views.

But as we have seen, every child is different. Some children become severely malnourished from an early age, while others are stubborn, curious, and talkative from an early age. Well, the question is, how do these characteristics, behaviors and characters develop in a child? Based on world experience, we can say that these characteristics develop in a child in direct connection with the family environment. The reason is that each person has an identity, that is, he has the same character, and this character of the person does not change. One of the factors that differs a person from others is his character. That is, we all know that someone can be stubborn, generous, cheerful, or cowardly in life. But that behavior doesn't change over the years. The relevance of these ideas to our subject is that the immutable character and character of a person emerges and is formed in his childhood. The role of the family in this period is unique. This is because the child spends 70-80% of his time with his family and is influenced by his family. And it is from this environment that character is formed.

Problems and how to tackle them

All of the above ideas were small thoughts and facts about the world of children. Now let's think about the problems between the child and the parents in raising a child. Children are pure and the sweetest gift in the world. Unfortunately, today we face many problems in understanding the upbringing of children. Here are some of the issues we will discuss with you:

1. Ignoring giving them an adequate amount of time and attention
2. Indifference.
3. Strict control, prohibitions, denial of his dreams and actions.
4. Lack of understanding of the child's original thinking, imagination and dreams.
5. Conflicts (in the family or between relatives)

The statistic facts also proof these concepts:

7.4% of children aged 3-17 years (approximately 4.5 million) have a diagnosed behavior problem. 37.1% of children aged 3-17 years (approximately 4.4 million) have diagnosed anxiety. 33.2% of children aged 3-17 years (approximately 1.9 million) have diagnosed depression. Ever having been diagnosed with either anxiety or depression" among children aged 6-17 years increased from 5.4% in 2003 to 8% in 2007 and to 8.4% in 2011-2012. 4"Ever having been diagnosed with anxiety" increased from 5.5% in 2007 to 6.4% in 2011-2012. 4"Ever having been diagnosed with depression" did not change between 2007 (4.7%) and 2011-2012 (4.9%).

Below we give you an overview of a brief classification of these problems...

This means that the present spends very little time with the child at the moment and is distracted. That is, when a child reaches a certain age and is able to eat, dress, and do his or her own work for a while, the parent reduces attention and time toward the child. The main reasons are that their work is over-focused on household chores or that they focus on another another child (mostly a newborn baby). And as a result, the child is

neglected. When a child does not receive attention from his parents, he undergoes negative changes. For example: developing various weird and harmful habits, being selfish, over-trying to prove something, stubbornness, low schooling and grades, and so on. so the question arises as to why a child goes down this path for the sole purpose of "Attention" and proving to his parents that he exists in their lives.

"Innocence". Some parents are indifferent to the mental and physical changes in their baby. That's the decent thing to do, and it should end there. The changes take place as you grow older. However the child, as we have said, generally does not forget the negligence of observant and attentive parents, especially in childhood. As a result, the child develops a slight lack of confidence in the parent, and this feeling is likely to grow and lead to confusion in future parental relationships.

Sadly, in many families there are many restrictions and restrictions on a child from an early age. Some parents think that children should be kept under strict control... But this method can cause the child to become cowardly in the future, not having a certain opinion, too obedient or conversely, too playful and annoying person. The reason for this is that the child lives in the footsteps of his parents from an early age, and in many cases his dreams remain in the depths of his heart. As a result, he does not have an independent opinion and decision. Or, conversely, some children may want to try to do the same thing in violation of the restrictions, at which point the parent's behavior will disrupt the child's upbringing.

Problems like this can lead to the young generation going astray in the future, not being able to find themselves, and not having a clear purpose in life.

The bottom line is that children and their hearts are white yet unwritten book. You are the author of the first page. To understand them, you need a little love, attention, and care, not a lot of research or a scientific approach. So that when they turn the pages of their memory books one day, they will feel the pride, love, and trust in their parents as they talk about you as the most positive and kindest hero they can be when they remember about you.

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TECHNOLOGICAL SCIENCES

SMART MUSEUMS AND PROSPECTS OF THEIR DEVELOPMENT IN UZBEKISTAN IN THE STRUCTURE OF ANCIENT CITIES

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Abstract: Since 2020, the Samarkand State Institute of Architecture and Civil Engineering has begun developing new approaches to digitizing the ancient settlements "Smart Museum-Ancient Cities", which are under the protection of UNESCO. The latest Smart technologies are used that actively interact through IT systems: Internet of Things (IoT), augmented, virtual, mixed reality (VR / AR / MR), use and forecasting based on Big Data, iBeacon and other local technologies interactions (Bluetooth, Wi-Fi, Push, NFC).

Key words: Smart Museum - Ancient Cities, tourism, information technology, multimedia technology, digital technology

In the Samarkand State Institute of Architecture and Civil Engineering, since 2020, new approaches to the digitalization of ancient settlements with a UNESCO protected status have been started and are being developed [1].

Smart Museum - Ancient Cities fully meets the concept of "Smart Museums". Smart Museum - Ancient Cities is a unified system for smart museums and visitors exploring ancient sites. "Smart Museum - Ancient Cities" includes a mobile application that allows any visitor with a smartphone to receive audio, video, photo and text information about ancient settlements. The mobile application has a simple and intuitive interface and is designed for users of all ages.

The possibilities of "Smart Museum" are enormous. There is no need for guides, all the necessary information is sent to the visitor's mobile phone. This ensures the ease of making a tour of the ancient settlement, completely immersed in augmented reality, seeing the object in a panoramic view with a 360-degree view [2, 3, 4].

Thanks to such additions, you can consider any artifacts of the ancient settlement, architectural and landscape solutions of architects of the past. "Smart Museum - Ancient Cities" is useful in that it contributes to the preservation of jobs, since museum employees, freed from the need for direct contact with visitors, can spend their working time on improving their professional level, pay attention to the quality of service, and the formation of funds of the ancient settlement, as well as the popularization of the achievements of science and technology, historical comprehension in the coverage of ancient settlements, which are the national heritage.

In Uzbekistan, for the first time, we are mastering a new interactive program "Smart Museum - Ancient Cities" dedicated to ancient settlements.

Thus, "Smart Museum - Ancient Cities" is not only an object of art, architecture or ancient landscape. In essence, it is a huge and complex of systems interacting with each other, which ensures its functionality.

At the same time, the development and implementation of a "Smart Museum - an

ancient settlement" represents a great economic effect, since any ancient settlement can be seen in the virtual space without spending huge financial resources on their restoration, which at the same time allows fulfilling the requirements of the UNESCO international organization on safety national heritage in relation to the ancient settlements of Uzbekistan.

A distinctive feature of our proposed solution for "Smart Museum - Ancient Cities" is equipping the ancient settlement with a special Smart Box device (mini "Wi-Fi" server). Thanks to this device, the visitor does not consume the Internet traffic of the smartphone, which is significant for foreign tourists who are in roaming, and the museum of the ancient settlement does not need to cover the entire territory of the Wi-Fi network.

The specified application helps the tourist to choose one or another ancient settlement, an exposition to visit, in which his intellectual needs and interests are combined. The service will offer you to view 3D panoramas, its expositions, explain the history of the museum of the ancient settlement, determine the route to it, and purchase tickets in advance.

This will play an important role in popularizing the cultural heritage of Uzbekistan, the country's image, its ancient culture, and the use of new digital technologies will reveal the hidden potential of attracting guests and will contribute to the development of special tourism.

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INFORMATION APPROACH FOR EVALUATING THE CHARACTERISTICS OF MEASURING INSTRUMENTS

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Аннотация: Как известно, что различные типы средств измерений и их конкретные экземпляры отличаются друг от друга по свойствам. В связи с этим возможности и качество средств измерений определяются совокупностью ряда характеристик.

В статье рассмотрены информационные характеристики средств измерений и в качестве сравнения использованы значения: наибольшую погрешность, среднее квадратичное отклонение погрешности, энтропийную погрешность. Выявлено, что информационный подход позволяет оптимизировать характеристик средств измерений и оценить качество, а также возможности средств измерений.

Ключевые слова: Метрологическая характеристика, измерительная информация, теория информации, информационная характеристика, плотность распределения, значение энтропии, условная энтропия, энтропийный коэффициент, критерии качества.

Annotation: It is known that different types of funds and their different types differ from each other in properties. In this regard, the possibilities and quality of means for measuring indicators of a set of series.

The article discusses the information characteristics of measuring instruments and used the following values as a comparison: the largest error, the mean square deviation of the error, the entropy error. It was revealed that the information approach allows you to optimize the measurement parameters and evaluate the quality and capabilities of measuring instruments.

Keywords: Metrological characteristic, measuring information, information theory, information characteristic, distribution density, entropy value, conditional entropy, entropy coefficient, quality criteria.

Все средства измерений, используемые при измерениях и имеющие нормированные метрологические характеристики, являются техническими средствами. Метрологические характеристики это такие свойства средств измерений, которые позволяют судить об их пригодности для измерений определенной физической величины в заданном диапазоне её значений и с заданной точностью. Следовательно, принципиальное отличие средств измерений от других технических средств, используемых при измерениях, состоит в том, что погрешность, с которой они выполняют свои функции, лимитирована [1,3].

Различные виды средств измерений и их конкретные экземпляры отличаются друг от друга по свойствам. В связи с этим возможности и качество средств измерений определяются совокупностью ряда характеристик.

При оценки качества и эффективности средств измерений необходимо учитывать не только статические (например, функция, чувствительность, диапазон измерения и т.д.) но динамические свойства вызванные инерционностью средства измерений.

Так как все измерительные средства предназначены для получения измерительной информации, то необходимо особо учитывать их информационные характеристики [1,2].

Измеряемая величина x априори (до выполнения измерения) обладает некоторой неопределенностью, которая характеризуется значением энтропии.

$$H(x) = - \int_{-\infty}^{\infty} f(x) \log f(x) dx, \quad (1)$$

где $f(x)$ – плотность распределения вероятности случайной величины x .

С точки зрения теории дезинформации, количество энтропий до и после измерения:

$$1 = -H(x) - H(x/x_n) \quad (2)$$

Здесь $H(x)$ - априорная (безусловная) энтропия; $H(x/x_n)$ – условная энтропия, т.е. энтропия величины x при условии, что получен результат измерений x_n . Условная энтропия определяется законам распределения погрешности Δ измерительного средства и опишется в следующем виде

$$H(x/x_n) = - \int_{-\infty}^{\infty} f(\Delta) \log f(\Delta) d\Delta, \quad (3)$$

Если погрешность распределена равномерно на интервале $[-\Delta_m, +\Delta_m]$, то условная энтропия равна

$$H(x/x_n) = - \int_{-\Delta_m}^{+\Delta_m} \frac{1}{2\Delta_m} \log \frac{1}{2\Delta_m} d\Delta = \log 2\Delta_m, \quad (4)$$

При номинальном распределении погрешности с дисперсией σ^2 условная энтропия имеет следующий вид

$$H(x/x_n) = \log(\sqrt{2\pi e}\sigma), \quad (5)$$

где e – основание натуральных логарифмов; σ -среднее квадратичное отклонение погрешности. Сравнение уравнений (4) и (5) показывает, что средства измерений, имеющие различные законы распределения погрешностей, могут давать одинаковое количество информации при измерении. В данном случае это будет обеспечиваться при выполнении условия $2\Delta_m = \sqrt{2\pi e}\sigma$. Поэтому в качестве характеристики дезинформационного действия погрешности с произвольным законом распределения используется энтропийное значение погрешности [1,4,5].

Энтропийное значение погрешности – наибольшее значение погрешности с равномерным законом распределения, которая вносит такое же дезинформационное действие, как и погрешность с данным законом распределения погрешностей.

Если погрешность распределена нормально, то энтропийное значение погрешности равна

$$\Delta_{\text{э}} = \sqrt{2\pi e}\sigma / 2 = \sqrt{\frac{\pi e}{2}}\sigma \approx 2,07\sigma. \quad (6)$$

Энтропийное значение погрешности аналогично определяется для любого конкретного закона распределения. Зависимость между энтропийным и средним квадратичным значениями погрешности может быть представлена в виде

$$\Delta_{\text{э}} = k\sigma, \quad (7)$$

где k - энтропийный коэффициент.

Энтропийный коэффициент зависит от вида закона распределения вероятностей погрешностей. Для нормального закона распределения энтропийный коэффициент имеет вид

$$k_n = \sqrt{\frac{\pi e}{2}}\sigma \approx 2,07,$$

а для равномерного распределения

$$k_p = \Delta_{\text{э}} / \sigma = \sqrt{3} = 1,73.$$

Значения энтропийного коэффициента характеризуют область его значений, соответствующую реальным одномодальным законам распределения вероятностей погрешности.

Анализ значений энтропийного коэффициента позволяет сделать вывод, что погрешность, распределенная по нормальному закону (при одинаковых значениях среднего квадратичного) вносит большее дезинформационное действие, чем погрешность, распределенная по равномерному закону. Значит дезинформационное действие погрешности с любым законом распределения меньше дезинформационного действия погрешности, распределенной по нормальному закону, при одинаковых средних квадратичных значениях [1,4].

Пример: Рассмотрим два прибора, предназначенные для измерения одной и той же физической величины но имеющие различные законы распределения погрешности. Погрешность первого прибора распределена равномерно на интервале $[-10^{-3}, +10^{-3}]$, а погрешность второго прибора – нормально с нулевым математическим ожиданием и средним квадратичным отклонением $0,5 \cdot 10^{-3}$. Для сравнения этих приборов по точности в качестве критерия можно предложить следующие значения: наибольшую погрешность, среднее квадратичное отклонение погрешности, энтропийную погрешность.

Наибольшее значение погрешности для первого прибора равно 10^{-3} , для второго прибора не ограничена, её наибольшее значение не существует. В таком случае, в качестве такого значения принимают значение, равное 3σ . В нашем примере $3\sigma = 1,5 \cdot 10^{-3}$. По этому критерию следует отдать предпочтение первому прибору.

Среднее квадратичное отклонение погрешности первого прибора равно $10^{-3}/\sqrt{3} = 0,58 \cdot 10^{-3}$, по этому критерию предпочтительным считается второй прибор. Сравнение приборов с точки зрения информационного подхода наиболее обоснованным является по количеству информации получаемой при измерении по энтропийному значению погрешности [1,2,4].

Энтропийное значение погрешности для первого прибора равно 10^{-3} , для второго прибора $k_n \cdot \sigma = 2,07 \cdot 0,5 \cdot 10^{-3} = 1,035 \cdot 10^{-3}$. Отсюда видно, что по информационному критерию эти приборы практически эквивалентны.

Таким образом можно отметить, что информационный подход оценки дает возможность анализировать любые средства измерений как в статическом, так и динамическом режиме работы, выявить взаимосвязи различных характеристик средств измерений, оптимизировать эти характеристики и оценить качество и предельные возможности тех или иных средств измерений.

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МЕТРОЛОГИЧЕСКИЕ ОСНОВЫ ТЕХНИКИ ИЗМЕРЕНИЯ ВЛАЖНОСТИ ВЕЩЕСТВ

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Аннотация: В данной статье рассматриваются сведения о метрологических основах методики измерения влажности веществ. Проанализированы вопросы методов контроля влажности и определения влажности с их помощью.

Ключевые слова: влажность, методы, измерения, температура, гигрометр, преобразователь.

Вода содержится во многих природных и технических материалах и поэтому при обработке их чрезвычайно важно знать содержащееся в них количество воды и определять допустимое количество ее в данном материале. Поиск приемлемых не только в области научных исследований, но и в промышленности методов измерения влажности привел к появлению большого числа теоретических предложений и аппаратных реализаций.

Причиной появления большого числа методов измерения является многообразие форм существования воды и материалов. Принципиально возможны следующие методы измерения влажности: гигрометр, действие которого основано на термостатическом уравнивании энергии (волосяной гигрометр и др.); психрометр; изобарическое охлаждение (гигрометр точки росы); адиабатическое охлаждение; изобарический нагрев; изотермическая абсорбция (электролитический гигрометр); изотермическое испарение (гигрометр насыщения); давление пара. Если в газах с переменными силами межмолекулярного сцепления воды и носителя эти силы учитываются при высоких температурах и давлениях, то межмолекулярное сцепление воды и твердых материалов или жидкости учитывается при низких температурах вследствие пористости структуры, т.е. адгезивности силы сцепления.

Различные условия внедрения приборов измерения влажности, вытекающие из этого факта, обуславливают выбор приемлемой системы измерения. Критерии выбора: область измерения; допустимая погрешность измерения, инерционность (постоянная времени); виды помех (пыль, коррозионные среды, магнитное поле и т.п.); необходимость очистки или отбора проб; виды агрессивных компонентов в измеряемой среде; наличие нормальных или специальных условий (например, по давлению или температуре); наличие особых условий применения взрывоопасного прибора; необходимость овода среды измерения после процесса измерения (обводной путь или открытый выход); характеристики экспериментального состояния процесса производства в месте измерения; необходимость очистки места измерения или места монтажа. Далее решаются вопросы, связанные с характеристиками измерительных преобразователей (ИП) и параметрами устройств обработки сигналов: вид выходного сигнала ИП; линейность его рабочей характеристики; градуировки; явления гистерезиса;

необходимость дополнительной энергии для измерения; тип и класс защиты; срок технического обслуживания; стоимость капитальных вложений и обслуживания

Влажность газа характеризуется содержанием в нем водяного пара. Абсолютная влажность d_v определяется плотностью водяного пара в газе

$$d_v = \frac{m_v}{V}, \quad (1)$$

где m_v - масса водяного пара; V - объем газа.

Относительная влажность U есть отношение массы водяного пара x_v в веществе при значениях температуры T и давления p , заданных для измеряемой среды, к массе водяного пара x_{vw} при насыщении этого вещества при низменных значениях p и T :

$$U_w = \left(\frac{x_v}{x_{vw}}\right)_{p,T} \cdot 100\%. \quad (2)$$

В области температур ниже 0°C следует определить, идет ли речь о насыщении льда или переохлажденной воде. Относительно льда из (2) получается

$$U_i = \left(\frac{x_v}{x_{vi}}\right)_{p,T} \cdot 100\%. \quad (3)$$

Если предлагать идеальное поведение газа, то переходят к (2) и (3) с помощью идеального закона газодинамики

$$U_w = \left(\frac{e}{e_w}\right)_{p,T} = \left(\frac{d_v}{d_{vw}}\right)_{p,T}; \quad (4)$$

$$U_i = \left(\frac{e}{e_i}\right)_{p,T} = \left(\frac{d_v}{d_{vi}}\right)_{p,T}, \quad (5)$$

где e_w , e_i , d_{vw} , d_{vi} , а также d_{vw} и d_{vi} являются функциями температуры [1], которые получают для различных температурных функций парообразования воды $L_v(T)$ или теплоты сублимации льда $L_s(T)$.

Точность, достаточная для практических применений, получается из формулы Магнуса для давления насыщенного пара над льдом:

$$e_i = e_{i,0} \cdot \exp\left(\frac{a_i \cdot t_i}{b_w + t_i}\right), \quad (6)$$

где t_i - область температур от -60°C до 0°C .

Количество водяного пара в веществе x_v получается из

$$x_v = \frac{n_v}{n_v + n_g}, \quad (7)$$

где n_v - количество (масса) водяного пара в веществе в молях, n_g - количество (масса) сухого газа в молях.

Отношение массы влажного газа к массе сухого газа определяется по формуле:

$$r = \frac{m_v}{m_g}, \quad (8)$$

где m_v - масса водяного пара; m_g - масса сухого газа.

При насыщении применимо соотношение (8) относительно воды r_w и относительно льда r_i .
Температура точки кипения T_d определяется из:

$$(r)_{p,T} = (r_w)_{p,T_d} \quad (9)$$

Она обусловлена такой температурой, при которой водяной пар, содержащийся во влажном газе при изобарическом охлаждении, достигает состояния насыщения относительно воды.

В области температур ниже 0°C адекватно получается температура T_1 точки согревания

$$(r)_{p,T} = (r_i)_{p,T_1} \quad (10)$$

Она определяется такой температурой, при которой водяной пар, содержащийся во влажном газе при изобарическом охлаждении, достигает состояния насыщения относительно льда.

В случае неидеального поведения газа идеальный закон распространяется на реальный газ через коэффициент компенсации Z . Для Z , который выбирается при идеальном поведении газа равным 1, значение получается из:

$$Z = \frac{p \cdot V}{n \cdot R \cdot T}, \quad (11)$$

где p - давление влажного газа; V - объем влажного газа; n - количество вещества; R - универсальная газовая постоянная.

Влажность твердого материала характеризуется содержанием в нем воды. Однако влажность твердого материала определяют только те молекулы, воды, которые располагаются в материале как «свободная вода», т.е. физически связаны с материалом межмолекулярными силами.

Эти обстоятельства ведут при градуировке (поверке) различных косвенно измеряющих приборов (например, методом электронного торможения) к возрастанию погрешности измерения. Измерение влажности методом нейтронного торможения охватывает общее количество атомов воды, в то время как при градуировке (поверке) методом сухого взвешивания определяется только «свободная вода».

Определение содержания воды в твердых, пористых материалах осуществляется с помощью сорбционных изотерм. Для заданных температур в качестве параметра выступают сорбционные изотермы влажности твердого материала, который находится в термодинамическом равновесии с окружающей влажной средой.

Количественная оценка влажности твердых веществ может осуществляться по формуле:

$$f = \frac{m_f - m_{dr}}{m_f} \quad (12)$$

и задается в единицах g/kg (г/кг) или kg/kg (кг/кг), где m_f - масса влажного материала, m_{dr} - масса высушенного вещества.

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РАЗРУШЕНИЕ МАССИВА РАЗНОПРОЧНЫХ ГОРНЫХ ПОРОД ВЗРЫВАМИ СКВАЖИННЫХ ЗАРЯДОВ С КУМУЛЯТИВНЫМ ЭФФЕКТОМ

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Способ взрывного разрушения массива разнопрочных горных пород скважинными зарядами с кумулятивным эффектом. Данный способ позволяет произвести равномерное дробление горных пород по высоте уступа за счет направленного использования энергии взрыва по крепким пропласткам, увеличить сетку взрывных скважин, снизить удельный расход ВВ затраты на бурения взрывных скважин.

Опорные слова: способ разрушения горного массива, разнопрочный массив, массовый взрыв, сосредоточенный и укороченный скважинный заряд, взрывчатое вещество, кумулятивный эффект, дробления горных пород, высота уступа, энергия взрыва, сетка взрывных скважин, удельный расход ВВ, затраты на бурения, взрывная скважина, открытая горная работа, горная промышленность, равномерное дробление.

В основных направлениях экономического развития Республики Узбекистан предусмотрен подъем экономики страны главным образом за счет ускорения научно-технического прогресса и широкого внедрения энергосберегающих технологий. Поиск эффективных путей снижения энергоемкости разрушения горных пород является одним из основных направлений современных научных исследований в горной науке. Ведущую роль в общем технологическом комплексе процессов горного производства занимает процесс рыхления горных пород буровзрывным способом.

Наличие крепких включений в сложноструктурном массиве горных пород затрудняет эффективное использование традиционных методов, так как ведет к большому выходу негабаритов, в связи с чем возникает необходимость разработки и внедрения специальных методов буровзрывной подготовки.

При реализации известных разработанных способов взрывного разрушения массива разнопрочных горных пород не обеспечивается равномерное дробление руды с включением крепких пропластков, что ведет к ухудшению качества подготовки горной массы и повышенным затратам на экскавацию. Применение известных способов взрывания разнопрочных массивов горных пород, включающих определение свойств твердых включений, пределов прочности массива горных пород и крепких включений, бурение вертикальных основных и дополнительных скважин, не обеспечивает достаточной эффективности дробления массива горных пород с различными твердыми включениями.

Вопросы дробления массива разнопрочных горных пород скважинными зарядами взрывчатых веществ (ВВ) с использованием кумулятивного эффекта, разработки способов и эффективных параметров ведения буровзрывных работ (БВР) в сложных горно-геологических условиях в отечественной и зарубежной литературе недостаточно освещены. Отсутствуют закономерности изменения радиуса действия кумулятивного заряда в зависимости от массы ВВ в скважине, глубины действия кумулятивной струи и плотности заряда, а также свойств

взрываеваемого массива горных пород.

В связи с этим разработана способ и определены эффективные параметры БВР при разрушении массива разнопрочных горных пород скважинными зарядами ВВ с использованием кумулятивного эффекта, позволяющих обеспечить равномерность дробления массива по высоте уступа, снизить удельный расход ВВ и затраты на бурение основных скважин, являются актуальной научной задачей и имеют важное практическое значение.

Разрушения массива разнопрочных горных пород взрывами рассредоточенных и укороченных скважинных зарядов с кумулятивным эффектом, который относится к горной промышленности, в частности к дроблению разнопрочных горных пород взрывом скважинных зарядов ВВ на открытых горных работах.

Способ достигается тем, что основные скважинные заряды ВВ рассредоточивают, а в дополнительных укороченных скважинах, пробуренных между основными скважинами, размещают кумулятивную металлическую облицовку с зарядом ВВ, позволяющего произвести равномерное дробление горных пород за счет направленного использования энергии взрыва по крепким пропласткам, схема которого приведена на рис. 1.

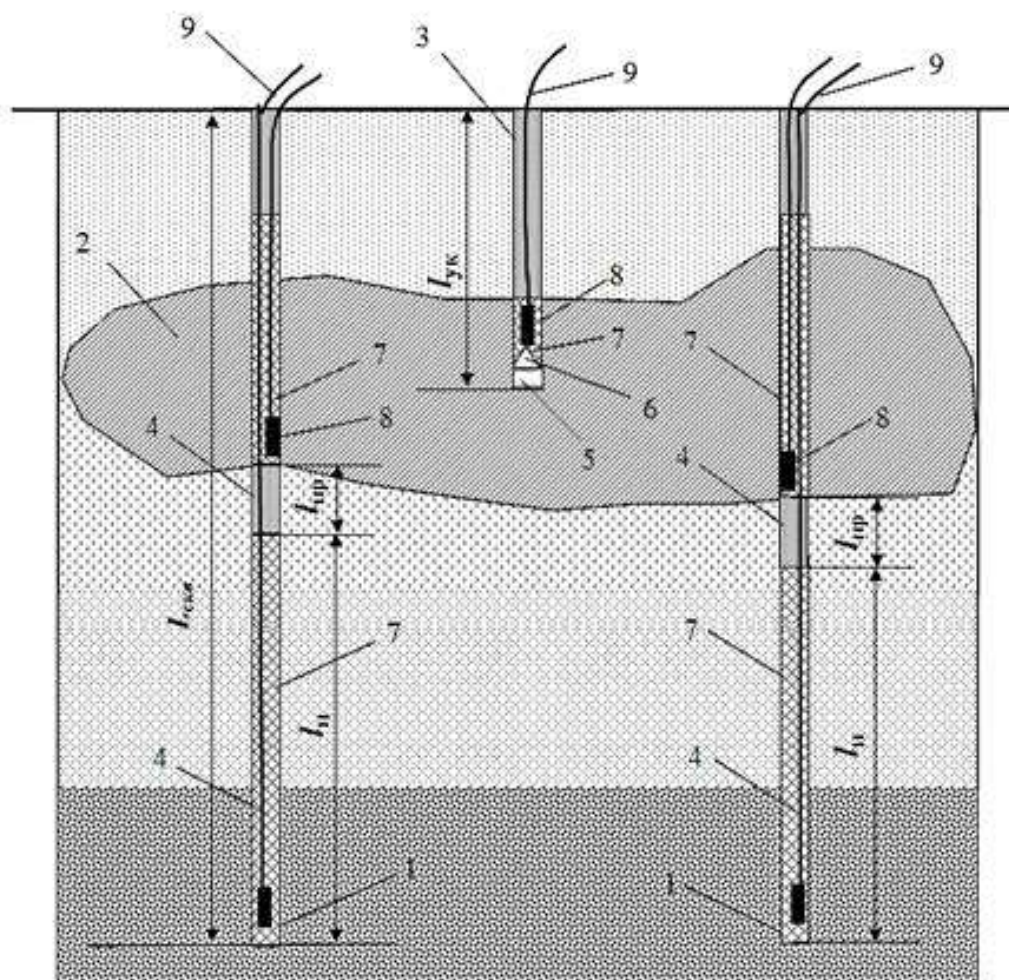


Рис. 1. Способ разрушения массива разнопрочных горных пород взрывами рассредоточенных и укороченных скважинных зарядов с кумулятивным эффектом: 1 - основные скважины; 2 - твердое включение в массиве разнопрочных горных пород; 3 - укороченная скважина; 4 - инертный промежуток из бурового шлама; 5 - пенопластовый цилиндр (фокусное

расстояние); 6 - конус из металлической пластинки; 7 - взрывчатое вещество; 8 - промежуточный детонатор; 9 - источник инициирования с ударно-волновой трубкой неэлектрической системы инициирования.

Способ реализуется следующим образом. На подлежащем к взрыву блоке принимают базовую сетку для бурения основных скважин, которую определяют на основе результатов опытных взрывов. Бурение основных скважин - 1 производят по разнопрочному массиву горных пород на полную высоту взрываемого уступа. В процессе бурения по изменениям скорости и режимов бурения, цвета и состояния, выдаваемых на поверхность продуктов разрушения, геолого-маркшейдерской службой определяются наличие, контур в плане, отметки кровли и почвы крепких включений - 2. Внутри контура в плане крепких включений бурят дополнительные укороченные скважины - 3, которые располагают в центре четырехугольников, образованных соседними основными скважинами - 1.

Глубина укороченных скважин определяется по формуле:

$$l_{ук} = \frac{\sum_{i=1}^n l_{on_i}}{n} - (5...8)d_{скв}, \text{ м}, \quad (1)$$

где l_{on_i} - отметка подошвы твердого включения по глубине основных скважин, между которыми расположена соответствующая дополнительная скважина, м; n - число основных скважин, между которыми расположена соответствующая дополнительная скважина; $d_{скв}$ - диаметр заряда ВВ в дополнительных скважинах, м.

При заряджании основные скважинные заряды рассредотачивают инертным промежутком - 4, который размещают в менее прочных породах до уровня почвы крепкого включения, а его высоту определяют по формуле:

$$l_{np} = (0,25 \div 0,3)l_n, \quad (2)$$

где l_n - высота нижней части заряда (м).

При заряджании укороченных скважин, на дно закладывают заряды с кумулятивной выемкой, которые конструируют следующим образом. В скважину опускают пенопластовый цилиндр - 5 высотой $(6 \div 8)d$ (где d - диаметр кумулятивного заряда, мм) который служит для создания фокусного расстояния. Далее опускают конус - 6, изготовленный из металлической пластинки с диаметром равным диаметру скважины и имеющий угол вершины 45^0 . Затем закладывают заряд ВВ - 7, масса которого ВВ рассчитывают по формуле:

$$Q = (3 \div 4) \cdot q \cdot h_{кв}^3, \text{ кг}, \quad (3)$$

где q - удельный расход ВВ, $\text{кг}/\text{м}^3$, принят $0,5 \div 0,6 \text{ кг}/\text{м}^3$; $h_{кв}$ - мощность крепких включений, м.

Взрывание рассредоточенных основных скважинных зарядов ВВ производят одновременно с опережающим короткозамедленным инициированием верхнего заряда, взрывание заряда ВВ в укороченных скважинных производят с короткозамедленным взрыванием с опережением от рассредоточенных основных скважинных зарядов на 5-10 мс.

Размещение и взрывание зарядов ВВ в основных и укороченных скважинах в пределах крепкого включения снижает направленность действия взрыва в сторону вмещающих пород имеющих меньшую сопротивляемость взрыванию, тем самым энергия взрыва этих зарядов концентрируется на дробление крепкого включения. Это позволяет обеспечить эффективное разрушение зон нерегулируемого дробления в крепком включении, где обычно и происходит образование негабарита, при этом снизить удельный расход ВВ и увеличить сетку бурения

скважин, тем самым сократив затраты на их дробление.

Для применения схемы одновременного инициирования верхнего и нижнего зарядов рассредоточенного инертным промежутком, требуются специальные средства инициирования, не вызывающие детонации заряда в скважине и инициирующие только промежуточный детонатор (применяется, например, неэлектрическая система инициирования). Интервал замедления, между такими зарядами должен обеспечивать опережающее разрушение крепкого включения, позволяя тем самым подготовить свободную поверхность (взорванный слой уступа) для направленного действия взрыва нижнего заряда ВВ. Разрушая менее прочный массив нижним рассредоточенным зарядом ВВ, за счёт вылета продуктов детонации и взрывного смещения горной массы, происходит доразрушение крепкого включения и тем самым увеличивается коэффициент полезного действия взрыва. Таким образом, исключается образование газовых полостей и излишнее взрывное нагружение менее прочного массива, что повышает эффективность использования энергии взрыва.

При инициировании зарядов ВВ в укороченных скважинах интервал замедления между ними и расположенными вблизи верхними рассредоточенными зарядами ВВ, должен обеспечить образование в крепком включении начальных трещин, которые образовавшись от взрыва зарядов ВВ дополнительных скважин, будут развиваться, и раскрываться от действия взрыва основных зарядов.

Таким образом, разработан способ взрывного разрушения массива разнопрочных горных пород рассредоточенными и укороченными скважинными зарядами с кумулятивным эффектом, позволяющий произвести равномерное дробление горных пород по высоте уступа за счет направленного использования энергии взрыва по крепким пропласткам, увеличить сетку взрывных скважин, снизить удельный расход ВВ и затраты на бурения взрывных скважин.

Определение эффективных параметров ведения БВР в разнопрочных горных породах и разработка методики их инженерного расчета в промышленных условиях. Для определения эффективных параметров БВР при дроблении массива разнопрочных горных пород взрывами рассредоточенных и укороченных скважинных зарядов с кумулятивным эффектом на карьере Ташкура Джерой-Сардаринского месторождения фосфоритов проведены опытно-промышленные взрывы.

Для установления расстояния между рядами основных скважин пробурены 5 скважин, расположенных в одном ряду на различных расстояниях, схема которых приведена на рис. 2. Эффективное расстояние между рядами скважин устанавливалось по проработке подошвы уступа, определяемой по маркшейдерскому замеру после каждого взрыва.

Для установления расстояния между скважинами в ряду были пробурены 6 скважин на различных расстояниях между скважинами, схема которого приведена на рис. 3.

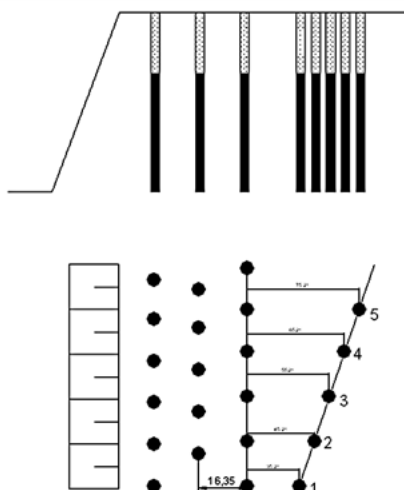


Рис. 2. Схема расположения скважинных зарядов ВВ для установления расстояния между рядами основных скважин: 1-5 - скважины, расположенные на различных расстояниях от ряда.

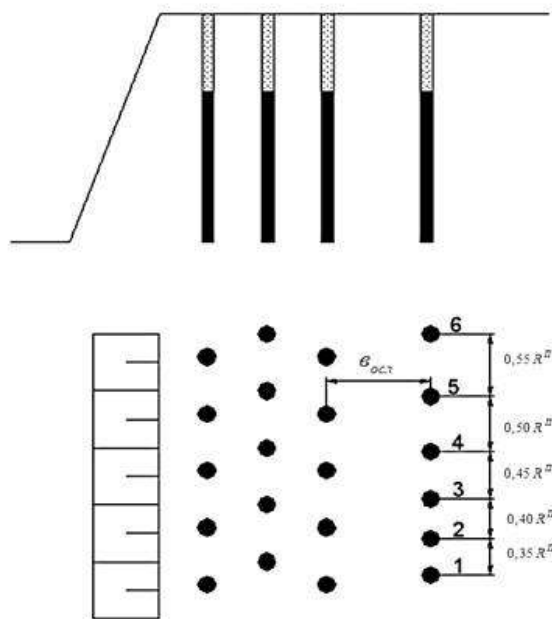


Рис. 3. Схема расположения скважинных зарядов ВВ для установления расстояния между скважинами в ряду: 1-6 - скважины, расположенные в одном ряду на различных расстояниях друг от друга.

Выводы. Разрушение массива разнопрочных горных пород рассредоточенными и укороченными скважинными зарядами с кумулятивным эффектом, позволяющий произвести равномерное дробление горных пород по высоте уступа за счет направленного использования энергии взрыва по крепким пропласткам.

Дробления зарядами ВВ слоевой выемкой с предварительным разрушением массива разнопрочных горных пород взрывами скважинных и щелевых зарядов,

обеспечивающий повышение эффективности взрывания разнопрочного массива в сложных гидрогеологических условиях, снижение себестоимости буровзрывных работ за счет замены дорогостоящих водоустойчивых ВВ более дешевыми смесевыми.

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OPTIMIZATION OF TREATMENT OF HERPETIC STOMATITIS

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Herpes viral infection (HVI) occupies one of the leading places among viral diseases in humans due to the widespread prevalence of the virus and the ability to be persistent perpetually in humans after a primary infection. According to the WHO, from 90 to 100% of the world's population are infected with herpes simplex viruses (HSV) of the 1st and 2nd types. Based on the results of the analysis of scientific research and scientific literature data, one can come to the conclusion that there is a need for large-scale research on this problem in Uzbekistan.

The aim of research was to study of the efficiency of applying biological active additive Reptin-plant within the complex treatment of herpetic stomatitis patients and therapeutic effect of photodynamic therapy with the PDU device in patients with HSV.

Under our supervision, there were 75 patients diagnosed with HSV at the age of 18 to 40 years, divided into three groups, depending on the therapy. 25 (29.4%) patients were treated in the traditional way, traditional therapy (TT) (1st group). 30 (35.3%) patients - group 2, along with TT, additionally received a biologically active food supplement based on alipid concentrate from the biomass of snakes of the genus ERYX - Reptin-plant (made in Uzbekistan). 30 (35.3%) patients - group 3, along with TT and abiological active food supplement based on alipid concentrate from the biomass of snakes of the genus ERYX - Reptin-plant, additionally received photodynamic therapy (PDT). All patients were mainly treated on an outpatient basis.

Analysis of the data obtained from the treatment results showed that in the 3rd group of patients with HSV, complex treatment (traditional treatment + Reptin-plant + PDU) was more effective than traditional therapy alone. Weakening or disappearance of symptoms of intoxication of the body and pain in the OM was earlier for 3-5 days in the 3rd group than in the 1st and 2nd group of patients with HSV. The processes of partial epithelization and complete foci of destruction and lesion occurred 4-5 days faster than in patients of the 1st and 2nd groups. Moreover, in the 3rd group of patients with HSV, the frequency and severity of recurrent HVI decreased by 1.5-2 times compared with patients in the 2nd group. Also, in this group of patients, we noted the lengthening of the duration of remission by an average of 1.5-1.8 times, in contrast to the control group of patients (3rd group of HSV).

Complex treatment of children with HSV was more effective, as evidenced by the results of the 3rd group. When using PDU, traditional therapy and a biologically active food supplement based on alipid concentrate from the biomass of snakes of the ERYX genus - Reptin-plant (made in Uzbekistan), patients of the 3rd group observed earlier disappearance of symptoms of HVI intoxication and pain in the oral mucosa, enhanced result of complete epitilization, a decrease in the frequency and severity of relapses, as well as an increase in the duration of remission.

AVESTA AND LEGAL ANTHROPOLOGY

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Аннотация: в статье автор анализирует возникновение юридической антропологии и с этих позиций исследует Авесту как древний источник права. В завершении статьи автор формулирует необходимость изучения древних памятников права, именно исходя из закономерностей развития юридической антропологии, которая более точно и всесторонне исследует процессы зарождения права и государства.

Ключевые слова: Авеста, зороастризм, юридическая антропология.

Annotation: in the article the author analyzes the emergence of legal anthropology and from this point of view examines the Avesta as an ancient source of law. At the end of the article, the author formulates the need to study ancient monuments of law, precisely based on the laws of development of legal anthropology, which more accurately and comprehensively examines the processes of the origin of law and the state.

Keywords: Avesta, Zoroastrianism, legal anthropology.

Аннотация: мақолада муаллиф юридик антропологияни юзага келишини таҳлил қилиб, айнан шу жиҳатдан Авестони қадимий ҳуқуқ манбаи сифатида тадқиқ этган. Мақола якунида муаллиф қадимий ҳуқуқ манбаларини ўрганиш зарурияти тўғрисидаги фикрни билдириб, уларни юридик антропология нуқтаи назари асосида ўрганилишини таъкидлаган, чунки бу фан ҳуқуқ ва давлатни юзага келишини аниқроқ ва атрофлича тадқиқ этишини кўрсатган.

Калитли сўзлар: Авесто, зардўштийлик, юридик антропология

N.Rulan's book "Legal Anthropology" describes the emergence of a new science - legal anthropology from a historical perspective.

The Creation of Legal Anthropology: Sumner-Maine, Bachofen, McLennan, Morgan. In the next (XIX century) a certain terminological fermentation is already a symptom of the emergence of legal anthropology: first they talk about comparative jurisprudence, then about legal archeology; the phrase legal ethnology appears only in 1890 in the work of G. Post "Fundamentals of ethnological jurisprudence".

Whatever the verbal expression of the new discipline, 1861 becomes a key date in its history. At the same time, two fundamental works were published in Stuttgart and London: "Maternal Law" by I.Ya.Bachofen opens the ethnology of kinship, on this path will soon be taken by J. McLennan ("Primitive Marriage", 1865) and L. G. Morgan ("Systems of consanguinity and family ties", 1871). But the true founder of legal anthropology was GJ Sumner-Maine with his works Ancient Law (1861), The Earliest History of Institutions (1875), and Ancient Law and Practice. As evidenced by the languages (German and English) in which these works were written, France remained silent during these first decisive years.

G. J. Sumner-Maine (1822-1888) was engaged in a variety of activities. First of all, he taught civil law at Cambridge, Roman law in London, and from 1869 he was the first professor of historical and comparative jurisprudence at Oxford, then taught international law. He also held important positions in the administration: as Vice Chancellor of the University of Calcutta and a very influential member of the Board of Governance of India, he was one of the responsible for the codification of Indian law. These functions performed by him explain why his work, mainly on the history of family and property, focuses on India. Nevertheless, Maine does not limit his field of research to examples of distant societies: European law, in particular Irish law, occupies an important place

in his writings. There are two main ideas in these writings. First, the theory of the three stages of the evolution of law: at first, people think that the right was given to them by the gods who dictated it to the sovereigns (Moses and his ten commandments); then law is identified with custom; then it mixes with the law. During this long evolution, the law had to go through various stages from status to contract: in the distant past, the rights and obligations of an individual in the society of which he is a member are established rather rigidly depending on his status in this society; in modern societies, in which the status of a person is more mobile in relation to social groups, his freedom is expressed in the development of treaty acts. Secondly, studying the cult of ancestors, Maine seeks to establish the priority in time of the patrilineal degree of kinship and, accordingly, the patriarchal society. Maine is an evolutionist in the Darwinian tradition. For him, distant societies are immobile and infantile, only Europe has shown high dynamism in the field of legal development.

I. Ya. Bachofen (1815-1887), professor of Roman law and judge of the Criminal Court in Basel, also follows the evolutionist tradition and studies primarily the degrees of kinship, but, unlike Maine, he claims the primacy of matriarchy over patriarchy - the invention of agriculture is associated with matriarchy. Since antiquity, many sources indicate the existence of matrilineal relationships. Bachofen explains this by the "remnants" of the era of matriarchy, which, in turn, was preceded by a period of uncertainty of kinship or a stage of primitive promiscuity. These ideas were later often picked up by others, but today there is practically nothing left of them, except that their echoes are heard in the arguments of the feminist movements. No ethnographic observation has ever confirmed the stages of primitive promiscuity, and only a few authors still believe in the very existence of matriarchy (although there are societies where, like the Tuaregs, the status of a woman is almost the same as that of a man, but such examples are extremely rare). Be that as it may, Bachofen's contribution from the point of view of methodology is very great. For most traditional societies have not left us with written sources comparable to those used by historians. While mistrusting linguistics, Bachofen, on the contrary, prefers the study of works of art, especially mythology. His great discovery in the field of mythology was the comprehension of the fact that "even if the stories are fictional in the main, they nevertheless correspond to the inner truth that can enlighten us about objective reality."

Legal anthropology, asserting itself as a science capable of deciphering images and symbols outside of writing, departs from textual interpretation, which novelists, in particular Mommsen, could bring almost to perfection, but which still did not escape the danger of abstraction. As J. Costa writes, "Bachofen's main merit was that he went beyond the written history and showed the coincidence in time of customs, which not only belonged to distant eras, but also coexisted in space with legal systems that divided the world into zones of exceptional influence".

Compared to these two authors of whom he was a contemporary, J. McLennan appears to be a less significant figure. Nevertheless, he was, along with Bachofen, the forerunner of the analysis of the degree of kinship, and some of his discoveries are still widely used in the anthropology of kinship. He invented the terms endogamy and exogamy; studied levirate, which he linked to polyandry; his merit lies primarily in the fact that he drew attention to degrees of kinship and gave their classification typology, which Morgan a few years later deepened in a more pedantic way.

Lewis G. Morgan (1818-1881), a New York lawyer who was a major expert on North American Indians, was the main representative of evolutionism of this time. His principles, which he sets out in the work "Ancient Society" (1877) are simple and based on purely technical classification criteria. Humanity goes through three phases (each of which is

subdivided into three stages): Wildness (hunting and gathering; primitive communism); Barbarism (domestication of animals, agriculture, metallurgy; tribal or clan property, patriarchal family); Civilization (invention of writing, paper, steam and electricity, monogamous family, private property, state). In the future, according to Morgan, evolution should lead to the abolition of private property.

This book has received a very wide audience. But it was outdated: very soon, after conducting comparative studies and pushing the idea of progress to an extreme, Morgan tried to create a generalizing work that was premature. More technical and less well-known at the time, his other major work, *Systems of Consanguinity and Kinship Ties in the Family* (1871), went far in the study of the anthropology of kinship, while his predecessors were just getting started.

This work is based on patient questioning: Morgan collected information directly from the Indians and had correspondents in many parts of the world. But here his discoveries are squeezed into the framework of evolutionism. Traditional societies, characterized on the basis of rudimentary knowledge about them, were at the lowest stage of progress, while on the opposite side were modern Western societies, where civilization is consonant with a monogamous family. Despite this lack of perspective, Morgan nevertheless deserves to be placed among the founders of legal anthropology. But his works owe their fame, in addition to their technically innovative nature, to another circumstance: they formed the basis of the Marxist theory of anthropology .

The repeated use of Morgan's conclusions by the founders of Marxism was both happiness and unhappiness for the author: on the one hand, they contributed to their dissemination, but, if we talk about a longer perspective, the author's ideas were discredited (and this discrediting was somewhat undeserved), through which they had to go the work of Morgan, for it is very often used to attack Marxism.

F. Engels (1820-1895) is more of a historian than an ethnologist. He seeks to go to the origins of the institutions that he finds in primitive societies in order to reveal the meaning of History, placing it on the plane of the concept of struggle. In his work "The Origin of the Family, Private Property and the State" (1884), he reproduces Morgan's theses: the modern family was born due to the gradual displacement of all relatives from the archaic marriage community, except for the father and mother.

Subsequent scientific observations refuted these claims. Even in communities that do not draw a connection between sexual relations and kinship, the family always has some degree of existence. In addition, the current comparative history of the family rejects the one-line conclusion about its evolution: the extended family is not necessarily the predecessor of the paired family, and the opposite process is observed .

Nevertheless, on other positions, the legal anthropology of Marx and Engels heralds the modern era. On the one hand, following Montesquieu's line, these authors reject the concepts of classical natural law and argue that law is part of the superstructure, which changes with changes in the conditions of the existence of the material basis; its content is inherently different, since law is a historical product of socio-economic life. On the other hand, they simultaneously consider one of the key problems of legal anthropology, namely the relationship between law and state. For them, the state is an intermediate form of organizing power: it did not exist forever, it will someday disappear . The state in reality is only a variant of a broader concept, the concept of public power. This power is an apparatus that guarantees the effectiveness of individuals' observance of the principles that allow society to function. But it can find its concrete expression in another form. When public power reflects the will of only one part of society (one or more leadership groups), and the armed forces on which it relies are separated from the population and constitute the police or army, that's when we are dealing with the state. On the contrary,

when a society is not divided, this is a traditional society. For Marx and Engels, law can exist without the state, but it is associated with the presence of public power. Moreover, not every non-state society must necessarily have public authority.

The development of applied legal anthropology is closely related to the presence of a colonial territory. Germany in this sense was deprived, for the Versailles Treaty deprived her of colonies. In addition, in 1939, under the influence of Nazism (with which Thurnwald, unfortunately, made some compromises), the editorial board of the Journal for Comparative Legal Science excluded from its ranks all non-German authors. With the end of the war, a nine-year period of silence ensues, after which German legal ethnology will develop primarily in a philosophical and methodological direction.

In Italy, colonial conquests, in particular in Somalia, allow authors to conduct field research, mainly aimed at the problems of cultural assimilation of the local population and the functioning of the colonial administration. Theoretical problems are becoming rare, and those who formulate them, such as Cerulli and Colucci, oppose the evolutionist theories of Post and Mazarella.

Applied anthropology is also becoming widespread in France; the authors' interest is directed preferably towards the African colonies, this feature will always prevail in French legal anthropology. Lawyers devote their efforts to editing collections of customary law, but even if the first attempts in this area date back to 1897, they ultimately yielded only a partial and unsatisfactory result.

One might think that in the face of such a double movement, both in theory and in practice, evolutionism would be a thing of the past. If his shortcomings were too obvious not to question him again, you should still relate it to your era. Nevertheless, realizing its initial inaccuracy, some authors nevertheless turned back to the theses of evolutionism, giving them a more refined character.

Taking these positions into account, let us take a look at the source of ancient law, which is the holy book of the Avesta fire worshippers.

Avesta the collection of the sacred books of Zoroastrianism, a religion that was widespread in antiquity and in the early Middle Ages in Iran, Central Asia, Azerbaijan, and Afghanistan. It is still used in religious services by the Parsis in India. The written text of the Avesta, based on age-old oral tradition, was codified in the third through seventh centuries under the Sassanids into 21 books, or nasks. Not more than one-fourth of this text has survived.

The Avesta is known in two editions, or variants. The first is a collection of liturgical fragments from various books of the Avesta, and the second consists of the Vendidad, a compilation of religious and legal precepts; the Vispered and Yasna, liturgical hymns; the Yashts, hymns to the Zoroastrian deities; and the Little Avesta, prayers. The oldest part of the Avesta-the Gathas (hymns)-is the section of the Yasna ascribed to the prophet Zarathustra (Zoroaster). In contrast to the Gathas, the other parts of the Avesta are called the Younger Avesta. All parts of the Avesta, especially the Yasna and the Yashts, contain many elements of mythology.

Most contemporary scholars think that the Avesta appeared during the first half of the first millennium B.C. in one of the regions of Central Asia or in the neighboring territories of northwestern Afghanistan and northeastern Iran. The Younger Avesta, which also includes the Yashts, reflects the process of the fusion-commonly thought to have begun in the fifth century B.C.-of the teachings of Zoroaster, developed by his followers, with beliefs and rites of old tribal cults that were alien to the preaching of this prophet and of religious systems that were unorthodox from the point of view of Zoroastrianism and were widespread in the territories of the Achaemenian, Parthian, and Sassanid states of Iran.

The Avesta underwent accretions and changes in many areas that were settled by Iranian peoples. Thus it is the common monument of many peoples and is important for the study of their history, their social and political institutions, their mode of life, culture, religious beliefs, folklore, and literary traditions. The Avesta has preserved some artistic passages, principally of mythological nature. They contain many poetical figures and some elements of initial rhyme as well as assonances and alliterations. The hymns of the Gathas are fully versified in five different syllabic meters. The Avesta was first translated and published in a European language (French) in 1771 by Anquetil-Duperron. It has given rise to a vast scholarly literature.

Zoroastrianism (zô'rōās`trēānizəm), religion founded by Zoroaster, but with many later accretions.

Scriptures Zoroastrianism's scriptures are the Avesta or the Zend Avesta [Pahlavi avesta=law, zend=commentary]. The Avesta consists of fragmentary and much-corrupted texts; it is written in old Iranian, a language similar to Vedic Sanskrit. The major sections of the Avesta are four—the Yasna, a liturgical work that includes the Gathas ("songs"), probably the oldest part of the Avesta and perhaps in part written by Zoroaster himself; the Vispered, a supplement to the Yasna; the Yashts, hymns of praise, including the Khurda ("little") Avesta; and the Videvdāt, a detailed code of ritual purification, often erroneously called the Vendidad. Other sources of information on Zoroastrianism are Achaemenid inscriptions, the writings of Herodotus, Strabo, and Plutarch, and the commentaries on the Avesta written (6th cent. A.D.) in Pahlavi, a Persian dialect used as a priestly language, under the Sassanids.

Origins and Beliefs

In its origins Zoroastrianism appears to have been the religious expression of the peaceful, sedentary communities of N Iran as opposed to the animistic polytheism of their enemies, the nomadic horsemen. Zoroaster consistently contrasts these two peoples as the People of Righteousness (asha) and the People of the Lie (druj). The religion was concerned with increasing the harvest and with protecting and treating kindly the domestic animals whose labors accomplished the production of food.

Gradually certain practices that Zoroaster appears to have deplored, such as the use of haoma (a narcotic intoxicant) in prayer and the sacrifice of bulls in connection with the cult of the god Mithra (a lesser god in Zoroastrianism), became features of the religion. It is not surprising, however, that former customs should be thus revived, because Zoroaster appears to have incorporated in his religion the old Persian pantheon, although very much refined. Instead of tolerating the worship of all the deities, however, he divided them into those who were beneficent and truthful and those whose malevolence and falseness made them abhorrent.

Heading the good spirits was Ahura Mazda (also Ormazd or Ormuzd) [sovereign knowledge], in primitive Zoroastrianism the only god. Six attendant deities, the Amesha Spentas, surround him. These abstract representations, formerly the personal aspects of Ahura Mazda, are Vohu Manah [good thought], Asha Vahista [highest righteousness], Khshathra Vairya [divine kingdom], Spenta Armaiti [pious devotion], Haurvatat [salvation], and Ameretat [immortality]. In time the Amesha Spentas became archangelic in character and less abstract. Opposing the good ahuras were the evil spirits, the daevas or divs, led by Ahriman. The war between these two supernatural hosts is the subject matter of the fully developed cosmogony and eschatology of Zoroastrianism.

The entire history of the universe, past, present, and future, the religion teaches, is divided into four periods, each of 3,000 years. In the first period there was no matter; the second preceded the coming of Zoroaster; and in the third his faith is propagated. The struggle between good and evil rages during the first nine millennia, and humans

help Ahura Mazda or Ahriman according to whether their conduct is good or evil. Each person after death crosses the Chinwato Peretav [bridge of the separator], which spans hell. If he is reprobate, the bridge narrows and he tumbles to perdition, but if he is worthy of salvation he finds a wide road to the realm of light. In the fourth period of the universe a savior, Saoshyant, will appear, the dead will rise for their final reward or punishment, and good will reign eternally.

Zoroastrianism should be regarded as quasi-dualistic, rather than (as sometimes described) wholly dualistic, since it predicts the ultimate triumph of Ahura Mazda. This god may be represented in the form of the pure natural substances that he has created, notably fire but also water and earth. The special veneration shown to fire and its use in religious ceremonies has led to the erroneous belief that the Zoroastrians were fire worshippers. The care taken to avoid contaminating these natural substances led to great elaboration of the purification ritual.

The religion's priests, successors to the pre-Zoroastrian Magi, acquired great power by their command of the techniques of purification. The priests also had great influence on the government in the first period of Zoroastrianism, that under the Achaemenids, when it was for a time the state religion. Alexander's conquest of Persia and the collapse of the Achaemenids destroyed the privileged position of Zoroastrianism. Little is known of the religion for the next 500 years, except that an offshoot, Mithraism (stemming from the worship of Mithra), was taking hold farther west. Zoroastrianism reemerged (c.A.D. 226) under Ardashir I, who established the Sassanid dynasty and fostered a general revival of Achaemenian culture. For four centuries Zoroastrianism was the state religion of the Sassanids, and it successfully met the challenge of nascent Christianity and, later, of heretical Manichaeism. In the mid-7th cent. Persia fell to Islam, and Zoroastrianism largely disappeared. The Parsis of India, centered on Mumbai, probably form the largest group of modern Zoroastrians, who are estimated to number between 124,000 and 190,000. Estimates of the number of persons (concentrated in Yazd, Tehran, and Kerman) who practice the religion in Iran today vary widely. Zoroastrianism affected Judaism (particularly during the time of the Captivity) and, through Gnosticism, Christianity.

In Avesto, thoughts about the lifestyle of our ancestors, the state, the family, the woman and the child .

During this period, Abu Rayhon Beruniy acquired valuable information in his monograph 'Ancient Monuments' about women's high standing. That is, the celebration of the honour of women in ancient times indicates that it was a day of 'disappointment' 5 days in February. The expression 'does not look foolish' refers to the meaning of the 'woman' and 'the mine' and the name of the angel, who is the giver of beautiful, honorable. Good deeds, and the lover of love to her husband, Beruniy says, 'In the past, this day was specific to the life of women, and the man would spend for them'.

In the patriarchal era, as a result of the state's emergence of a male-dominated position in social life, this celebration has been abolished, but women have maintained their superiors in the family [6]. One of the main reasons is that the peoples of the Central Asian region are busy with farming, livestock breeding, and the importance of women's labor in this process. In the primitive era, such works as land cultivation, harvesting were largely manually carried out. requiring many man-made labor. That is why Women have been working together in the field of farming business, without breaking into the housework.

Support and advocacy of humanitarian ideas and opinions. This is, of course, a sign of a particular culture that is based on women's lifestyle, their attitude to the environment. Written sources say that

women were respected even before Islam, and that they had a reputation and place not only in family, but also in society.

Avesto, in particular, reflects the beauty of the goddess Anahita or Nahid. the goddess of the nature and the wildlife of the goddess Nanay, the eternal and awakening, living and renewing nature of the goddess Amurdad and the idolatrous temples, with a beautiful, as illustrated by the fact that women have a special place and high Status in society. In Avesto, it is noted that the image of the woman has been 'distinguished by the fact that some elements of women's emancipation have appeared' and their attitude toward their husbands. That is, if a woman owns property, she has the right to use it for her

independent and charitable purposes. In Avesto, the role of women in the family, the role of women in their home and community are specifically emphasized in different ways. Particularly, in Avesto the patriarchal family is called 'dmana', the family head is called 'dmanopath' and the housewife is called 'dmanopat', Marriage is the result of the desire of both parties, but only after that has been confirmed by parents and guardians. The family was monogamous.

Dmanopath for providing financial support to the family, and the responsibility of dealing with household duties are the responsibility of the dmanopat.

This division of labour between rocks was an important factor in the social protection and economic well-being of women.

In Zoroastrianity, a marriage is sealed for a lifetime; a man is not married for two or temporary marriage. A married couple who have been harshly betrayed by a husband or a wife had been dishonoured, punished, and harmed by their spouse. In the 'Vendidad', part of the prose-specific 'Avesto', the details of the preservation of the family integrity, the marital status, the reasons and conditions for the abolition of marriage are detailed. Zaradusht says: O men and women who build a family, I tell you, each one of you is zealous for a good life. Earn each one of you with conduct and behavior, and that your life, and your family's life is strong, honest and productive. 'Zoroastrian' abuse of women's rights is bad, it is a sign of ignorance.

As for facts that are mentioned in Avesto, as much as attention is drawn to girls' education than boys'. Parents were responsible for girls' upbringing and education at home till they got married. According to Zaratusht's teaching, each parent should share the whole knowledge of his/her craft with daughters until they are 15 years Old. They are obliged to teach, purify and put them in the faith. Firstly daughters should make easier parents' duty secondly they should keep houses clean and ensure a family solidarity. Zoroastrianism led to the same rights for both women and men. Therefore, girls just like boys fought with enemies (boys), were able to protect themselves from their opponents, ride horses, run, get over various heights, waterfalls and other physical activities. Military occupation was compulsory. Girls as well as boys having reached the age of puberty passed special tests. As a result, girls were considered as housewives, called Kadbanu, but boys were entitled as a head of the family 'Kathudo' who were in charge for taking up the herd of the shepherd, riding a horse and a camel. Related to Zaratusht's teaching the youth had become hard-working, ready to acquire the skills and capabilities of their labor and occupation.

Therefore analysis texts of Avesta and juridical norms this sacred books on the methodology of the legal anthropology was demonstrated process of the genesis human rights in the distant past time.

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PEDAGOGICAL SCIENCES

"AVESTO" - A MEANS OF SPIRITUAL AND MORAL EDUCATION

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Annotation. This article focuses on the creation of the Avesto, the sacred source of Zoroastrianism, the ancient great spiritual heritage of our ancestors, in which the interpretation of the spiritual and moral image of man. The Avesto also covers the basics of Zoroastrianism, the creation of the world by Ahuramazda, the Day of Judgment and its reckoning, catastrophe, socio-legal principles, the birth and childhood of Zoroaster, the right path, the rights of members of society, education. issues.

Keywords: Avesto, wisdom, religious doctrine, historical monument, philosophical heritage, written source, Zoroaster, divine thinking.

Thanks to independence, our country has a great opportunity to study and promote the ancient cultural heritage and spiritual values of our ancestors. One example of such value is the Avesto. It is not only a religious, but also a unique historical-pedagogical, educational and encyclopedic monument. In recent years, interest in the study of this work, which has been a great complex of wisdom, has been particularly growing. From the point of view of modern science, the Avesto is a book of religious doctrine, a historical source, an encyclopedia of many aspects of the distant past, a unique product of ancestral thinking, a great source of wisdom to substantiate the essence of life and its various aspects as a philosophical heritage. , is a treasure that amazes the human mind with its excellent knowledge of social aspects, natural sciences, astronomy, medicine and other fields. The study of the Avesto remains an unprecedented field of scientific research.

As the first President of the Republic of Uzbekistan, Islam Karimov, who has not yet mastered the study of the Avesto, rightly said, it is indeed 3,000 years since the creation of our most authoritative and ancient manuscript, the Avesto. This rare book is the spiritual and historical heritage of our ancestors, who lived on this land between two rivers three centuries ago. At the same time, the Avesto is a historical document that testifies to the existence of a great state, a great spirituality, a great culture in this ancient land, which no one can deny.

The Avesto is the main source and sacred book of Zoroastrianism. It has also been used in forms such as Apastak, Ovisto, Ovusto, Abisto, Avasto. Avesto is an important and unique source for studying the socio-economic life, religious views, worldviews, customs and spiritual culture of the peoples of Central Asia, Iran and Azerbaijan in the pre-Islamic period. The materials in it have been around for nearly two thousand years and have been passed down orally from generation to generation.

Before Zoroastrianism became official, parts of the Avesto were spread among the peoples of Turan and Iran. These fragments, which are considered to be the divine messages of Ahuramazda sent through Zoroaster, began to be collected as various religious prayers, hymns. These were compiled into a book after Zoroaster's death and are called the Avesto - "Established, firmly established rules". This ancient written

source has not fully reached us. The great scholar Abu Rayhan al-Biruni writes of the Avesta: Alexander destroyed the flames and burned them while killing the servants in them. That's why three-fifths of Abyssinians disappeared at that time.

The most important source about the Avesto is the ninth-century Dencard (religious practices). It gives a full description of the twenty-one books of the Avesto. These definitions are a guide to good deeds, the rules of religious ceremonies and rituals, the basics of Zoroastrianism, the creation of the world by Ahuramazda, the Day of Judgment and its reckoning, the catastrophe, social and legal rules, Zoroaster's birth and childhood, righteousness, society the rights of its members, prayers recited against evil forces such as giants, demons, and so on. The Avesto is a treasure trove of wisdom and lessons. This work had an incomparably great impact on the development of world civilization and universal spirituality, praising the perfection and freedom of man in all respects. The Avesto, like all other religious books, is an encyclopedic work. It includes the principles, fards and sunnahs of Zoroastrianism, the definition and praise of the only creative power of Yazd, social life, various social strata, the material world, the role of various professions in marriage, the imperfections of the world and man, the existing system, their pros and cons, the true nature of Mazdaism, its differences from other religions, human thought, and many other issues.

According to the Avesto, the universe consists of two foundations - the beginning and the end, that is, the constant struggle between light and darkness, good and evil. The book interprets that the forces representing good are in heaven and the forces representing evil are under the earth, and that the face of the earth is the arena of struggle, that man is the confrontation of body and soul, and that human morality is the struggle of good and evil. The victory of good over evil as the end of the beginning, goodness always decides the destiny of man, urges him to have a radiant world, light, human qualities, to understand that honest and selfless labor is the basis of prosperity. That is the value and longevity of this work.

Zoroastrianism emerged at a certain stage on the basis of such factors as man's attitude to nature and society, his own way of understanding things and events, his spiritual beliefs. The first national-historical, religious-philosophical and moral-educational foundations, which had a great impact on the formation of the spirituality of our people, are primarily related to this doctrine. Naturally, this doctrine did not form suddenly. Zoroastrianism has come a long way to reform all aspects of material, economic and spiritual life on the basis of human principles. The fact that it is based on strict rules in all religions is also inherent in it. Zoroastrianism, with its fards and sunnahs, was formed on the basis of the struggle against such vices as polytheism, ignorance, annihilation, tribal and inter-ethnic strife, spiritual depravity, and immorality.

The divine thought in Zoroastrianism connects and symbolizes things and events in the name of God, and acknowledges that there are spirits of good and evil in the universe, and that the struggle between them is ongoing. While it is emphasized that members of society belong to one of these spirits, it is the ideal of Zoroastrianism to ensure that everyone is on the side of goodness only. At the heart of this ideal lies a commonality of moral and aesthetic views. Therefore, moral purity, spiritual and physical perfection have a deep meaning and are aimed at cultivating in man a hatred of ignorance and superstition, the preservation and appreciation of the beauty of all beings and creative labor. After all, morality, in addition to regulating the relationship between people, shapes the individual and his consciousness, contributes to the development of spiritual culture. Therefore, in all parts of the "Avesto" the idea of respect for the harmonious, creative person, respect for the gifts of the earth and the sky is expressed.

The Avesto is a book of high morals and enlightenment. Its moral norms and educational

status have been tested by centuries as a result of centuries of life experience. Their essence is reflected in the principles of good thought, good words and good deeds. Each of these principles is a condition of a certain moral norm in the process of forming a person as a harmoniously developed person, which logically complements and enriches each other. The principle of "good thought, good word, good deed", which defines the essence of the Avesto, is instructive for the modern world. Avesto "lessons. Indeed, the traditions of the ancestors and the values of the past serve as an important tool in the development of members of society, especially young people, as well-rounded human beings. The idea of goodness in him cultivates in young people such beautiful moral qualities as generosity, creativity, humility, nobility, address, public places, pool, canal, well, respect for existence in general, and evil fights against inhuman vices such as depravity, selfishness, ignorance, immorality.

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ELECTRONIC LEARNING ENVIRONMENT

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Annotation: This article discusses the issues of creating an e-learning environment in geometry in general secondary education.

Key words: E-learning environment, learning information, programmer.

Effective use of information and communication technologies in educational activities and improving the quality of education is directly related to the creation of an e-learning environment. Now it is possible to create not only e-learning courses with the help of educational portals, but also an e-learning environment that combines traditional learning opportunities and has a number of advantages.

We all know the problems of creating an e-learning environment for geometry in secondary schools, especially with the older generation of teachers. In order to solve this problem in a sense, electronic applications of modern textbooks are being created. This, in turn, will serve as a basis for creating some conveniences in creating an e-learning environment.

The following should be taken into account when creating an e-learning environment:

- Tasks on the procedure for creating an e-learning environment;
- requirements for e-learning environment;
- methods of creating an e-learning environment;
- Methods of creating an e-learning environment in geometry;
- Methods of creating an electronic environment for practical training in geometry;
- Rules for using the e-learning environment created in geometry.

Logical analysis, structure and systematization of educational material also play an important role in creating an e-learning environment. At the same time, in the created e-learning environment, it is necessary to determine the amount of educational information for each lesson on this subject. As a result, it is possible to calculate the open content of teaching in the e-learning environment on the topics, as well as to distinguish the basic concepts related to previous mastery, to determine the amount of knowledge and skills.

In the e-learning environment it should be possible to create a system of assignments, problems, questions based on the analysis of educational materials. This ensures the active participation of students.

At present, a number of electronic tools in the field of geometry have been created. These range from simple text to electronic formats to a variety of applications that incorporate different levels of interactivity. The author or the programmer may have been involved in the creation of these e-learning tools. An e-learning environment for modern teaching is a software product, the creation of which can involve a textbook author and programmer who have a deep knowledge of the content of the subject. On the contrary, one of the serious problems encountered in the creation of electronic tools is the lack of interaction between the author and the programmer, which implements the author's ideas in the form of a program. The complexity of this problem is that usually the author does not have a complete knowledge of the capabilities of a computer program, and the programmer is not an expert in the science of the textbook being created.

In such cases, as a result of the e-learning environment created, the full use of

computer technology and the author's improper questions are manifested.

In particular, traditional and innovative educational tools based on the use of computer technology and telecommunications, as well as other new information technologies are used in the distance learning process. In the language of modern education, these are called software and hardware tools of education.

The software and hardware introduced for distance learning should solve the following pedagogical tasks:

- Opportunity for independent reading and computer tests;
- Ensuring favorable conditions for the delivery of educational materials;
- Work with students and interact on the basis of team communication.

It is important to avoid the above-mentioned problems in creating an e-learning environment in geometry in secondary schools. It is also important to take into account the age of the students and their use in extracurricular activities.

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STATE AND LAW

NON-CUSTODIAL PUNISHMENT SYSTEM FOR JUVENILES: A COMPARATIVE LEGAL ANALYSIS OF THE CRIMINAL LAW OF SOME CIS COUNTRIES

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Annotation: This thesis examines the criminal law of some CIS countries and provides a comparative legal analysis of the types, penalties and terms of non-custodial sentences for juveniles comparing with the criminal law of Uzbekistan. As a result of the analysis, relevant recommendations could be made from some CIS countries in line with the policy pursued by minors in Uzbekistan.

Keywords: juvenile, non-custodial forms of punishment, coercive measures, CIS countries, criminal liability of minors.

In the countries of the world, whether it is developed or developing, the fight against crime, its prevention is one of the most pressing issues. In particular, foreign countries, including the CIS, are focusing on the prevention of crimes committed by minors, the correction of their morals, the upbringing of a generation that will benefit the state in the future. As a reason for this, we can say that young people are the future of every state, and the fact that they commit crimes will lay the groundwork for tomorrow's crime. Liberalization of the criminal justice system for the most vulnerable segments of the population, in particular juveniles, as well as improvement, the application of non-custodial criminal penalties, issues of releasing from liability and punishment, and the development of legislation are playing a key role in the ongoing reforms in the CIS countries, including in our country, aimed at developing the norms of the Criminal Code and the Criminal Procedure Code. Liberalization of the system of punishment of juveniles, supplementing them with other alternative, acceptable punishments that are not related to imprisonment as much as possible, achieving more compulsory measures of educational influence instead of punishments, expanding the existing list of them in our legislation requires studying the criminal law of neighboring CIS countries. Also, the main purpose of writing this article is to focus on non-custodial forms of punishment for juveniles in the CIS countries, as they have different alternatives only in these countries, as juvenile imprisonment should be considered as a last resort. However, the complete exclusion of a juvenile from society impedes his or her subsequent mental and personal development, and runs counter to the goal of the convict's moral correction, which is the primary purpose of punishment.

First of all, when we talk about the criminal liability of minors, we focus on how old a person must be to be a subject of crime, because each state has different age limits in its legislation, and some states do not specify it in the section on juvenile liability or strengthened criminal liability in the criminal code by setting a minimum age. Below we analyze the experience of some CIS countries.

The first part of Article 87 of the Criminal Code of the Russian Federation (hereinafter referred to as the CC) defines minors as those who were between 14 and 18 years old

at the time of the crime. The same definition can be found in Azerbaijan (Article 84 of the CC), Kazakhstan (Article 80 of the CC), Tajikistan (Article 86 of the CC), and Turkmenistan (Article 82 of the CC). In Belarus (Article 108 of the CC), Kyrgyzstan (Article 77 of the CC), and Uzbekistan (Article 81 of the CC), minors are listed as under 18 years of age, which does not mean that they do not have a minimum age limit, the minimum age is listed at the beginning of the code as the age of general responsibility.

In a number of countries, the norms describing the criminal regime of juveniles are set out in a separate chapter of the Criminal Code or in another criminal law. These are the CIS countries (except Moldova), the former Yugoslav republics (except Serbia and Croatia), Bulgaria, Hungary, Vietnam, Iraq, Latvia, Lithuania, the Netherlands, Romania and Ethiopia. The Republic of Moldova, the country in question, does not have a separate chapter in the Criminal Code and does not specify who is considered a minor, on the contrary, in general, the article itself, which is the subject of a crime, states that those between the ages of 14 and 16 can be prosecuted only under certain articles .

In many countries, not all types of penalties provided for adults in criminal law apply to juveniles. Thus, the punishment of minors constitutes a special, separate system. In particular, in Azerbaijan, Armenia, Kyrgyzstan, 4 types of penalties are imposed on minors, in Belarus - 7 types, in Kazakhstan, Russia - 6 types, in Tajikistan - 5 types, in Turkmenistan - 3 types. In order not to stray from the scope of the topic, we will analyze the specifics of non-custodial forms of punishment for juveniles in the CIS countries.

In Azerbaijan, Armenia, and Kyrgyzstan, non-custodial sentences for minors include: fines, correctional labor, and community service (Azerbaijan); fines, public works (Armenia); fines, public works, restraint of liberty (Kyrgyzstan). A fine is a fixed amount of money collected from a defendant for state revenue, and in all three of the above states, a fine is imposed on minors only if they have independent income or property that can be recovered. Of course, the minimum and maximum levels of money to be recovered vary in the three countries. It is noteworthy that the second part of Article 80-1 of the Criminal Code of the Kyrgyz Republic stipulates that a fine may be imposed on a minor only at the age of 16, and in the third part of this article, the fact that the fine imposed may be paid by the parent or legal representative of the juvenile on the basis of a court decision means that the criminal law of that State is unique in comparison with the law of the above States.

The criminal law of Azerbaijan and Kyrgyzstan has the same definition of public work, except that it differs in the amount and duration of imprisonment. Community work refers to useful community work that can be performed by minors in their spare time from school or work. According to the legislation of Azerbaijan, the total duration of public works is from 80 to 300 hours, for those under 15 - 2 hours per day, for those aged 15 to 16 - 3 hours per day, in Kyrgyz legislation - 40 hours to 120 hours, for those aged 14 to 16 - 2 hours per day, for those aged 16 to 18 are assigned no more than 3 hours a day. In the course of our analysis, it is noted that in the criminal law of Armenia, in contrast to the above two countries, the chapter on juveniles does not cover public affairs separately for this chapter, its definition, procedure, duration, rules of appointment are given in the system of punishments for general subjects, public affairs can not be appointed to persons under the age of 16 before sentencing, it was determined that this sentence would be imposed as an alternative to deprivation of liberty with the written consent of the defendant, before sentencing. Another surprising aspect is that Armenian law provides for a relatively long period of community service, ranging from 360 hours to 1,500 hours, which is not specified in a separate chapter of restricted amount of hours for juveniles.

Under Azerbaijani criminal law, correctional labor is imposed on minors for two

months to a year, with 5 to 20 percent of their income withheld at public expense. Under Kyrgyz law, as noted above, there is no correctional system in place for juvenile offenders, but in contrast to the criminal law of Azerbaijan, the imposition of restriction of liberty on minors applies. Restriction of liberty is imposed on those under 16 years of age for six months to one year, for those between 16 and 18 years of age for one to three years, and only for those who have committed a low-risk or less serious crime (classification of crimes is slightly different from Uzbek criminal law).

During our analysis, we witnessed 6 types of penalties for juveniles in the Criminal Code of Russia and Kazakhstan, we will enumerate only which are not related to imprisonment: fines, deprivation of the right to engage in certain activities, correctional work, community service, restriction of liberty (Kazakhstan) ; fines, deprivation of the right to engage in certain activities, correctional work, public works, restriction of liberty (Russia). This means that the number and type of penalties imposed on minors are also the same in the legislation of the two countries, although they have slightly different aspects. First of all, we made sure that in these countries there is a penalty of deprivation of the right to engage in certain activities that do not apply in the above states and in our own legislation. We know that in the legislation of Uzbekistan the deprivation of certain rights to minors is not used as a basic punishment, nor as an additional punishment (additional punishment for minors is not imposed in the legislation of Uzbekistan at all).

The fine penalty imposed on minors in the Criminal Code of the Republic of Kazakhstan is similar to the legislation of Azerbaijan and Armenia analyzed above, but faces different aspects in the legislation of the Russian Federation. For example, in the countries analyzed, fines are imposed only when minors have independent income or recoverable property, but Russian law stipulates that fines are imposed on minors with or without independent income or recoverable property. It is established that the fine imposed in such a case may be paid by the parents or legal representative of the minor on the basis of a court decision with their consent (this rule is also contained in the Criminal Code of Kyrgyzstan). Interestingly, under Russian law, the fine is set not only in the range of a certain fixed amount of money, but also based on the amount of income of the minor. In this case, the juvenile defendant shall be charged the amount of income or salary for a period of two weeks to six months. In our opinion, the establishment of such an alternative measure is positively assessed, because the income of individuals will not be the same, the amount of fines imposed for someone will be less, for someone this amount of money may be more.

As for compulsory public work, the legislation of the Republic of Kazakhstan stipulates that the total duration of public work is from 40 to 150 hours, and the limited daily working hours are similar to the criminal legislation of Kyrgyzstan. We can see almost the same in the Russian criminal law, but in them the total duration of public works is from 40 to 160 hours, and the daily limited working hours are the same as in the criminal law of Azerbaijan.

In conclusion, when comparing the criminal law of many foreign countries, the protection of the rights and freedoms and interests of minors, the penalties imposed on them are important in preventing the commission of crimes by minors. In this regard, based on the experience of the legislation of some CIS countries, we believe that it is appropriate to reduce non-custodial sentences for juveniles and increase coercive measures in their place.

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**SCIENTIFIC IDEAS OF YOUNG
SCIENTISTS**

**POMYSŁY NAUKOWE MŁODYCH
NAUKOWCÓW**

**НАУЧНЫЕ ИДЕИ МОЛОДЫХ
УЧЕНЫХ**