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# CONFERENCE ON THE ROLE AND IMPORTANCE OF SCIENCE IN THE MODERN WORLD

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## CONFERENCE ON THE ROLE AND IMPORTANCE OF SCIENCE IN THE MODERN WORLD

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## ANALYSIS OF THE RESULTS OF EXPERIMENTAL RESEARCH OF THE DESIGN OF A GEARED-ROLLER MECHANISM WITH A FLEXIBLE ELEMENT

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**Abstract:** This paper presents an analysis of the results of experimental studies on the design of a gear mechanism with a flexible element. The research includes the determination of the main operating parameters, investigation of structural features, as well as kinematic and dynamic analysis of the mechanism. Based on the obtained experimental results, scientific and technical solutions aimed at improving the performance and reliability of the gear mechanism are proposed. The research findings are of practical importance for the design and optimization of gear mechanisms.

**Keywords:** flexible element, gear mechanism, parameters, structural analysis, kinematic analysis, dynamic analysis, experimental research, scientific and technical solutions.

**Annotatsiya:** Ushbu maqolada qayishqoq elementli tarkibli tishli g'ildirakli mexanizm konstruksiyasining tajribaviy tadqiqotlari natijalari tahlil qilingan. Tadqiqot jarayonida mexanizmning asosiy ishchi parametrlarini aniqlash, uning strukturaviy xususiyatlarini o'rganish, shuningdek kinematik va dinamik tadqiq qilish ishlari amalga oshirilgan. Olingan natijalar asosida mexanizmning ish samaradorligini oshirishga qaratilgan ilmiy-texnikaviy yechimlar taklif etilgan. Tadqiqot natijalari tishli mexanizmlarni loyihalash va takomillashtirishda amaliy ahamiyatga ega.

**Kalit so'zlar:** qayishqoq element, tishli g'ildirakli mexanizm, parametrlar, strukturaviy tadqiqot, kinematik tadqiqot, dinamik tadqiqot, tajribaviy tahlil, ilmiy-texnikaviy yechimlar.

**Аннотация:** В статье представлен анализ результатов экспериментальных исследований конструкции зубчатого механизма с упругим элементом. В ходе исследования выполнено определение основных параметров механизма, изучены его структурные особенности, а также проведены кинематические и динамические исследования. На основе полученных экспериментальных данных предложены научно-технические решения, направленные на повышение надежности и эффективности работы механизма. Результаты исследования могут быть использованы при проектировании и совершенствовании зубчатых передач.

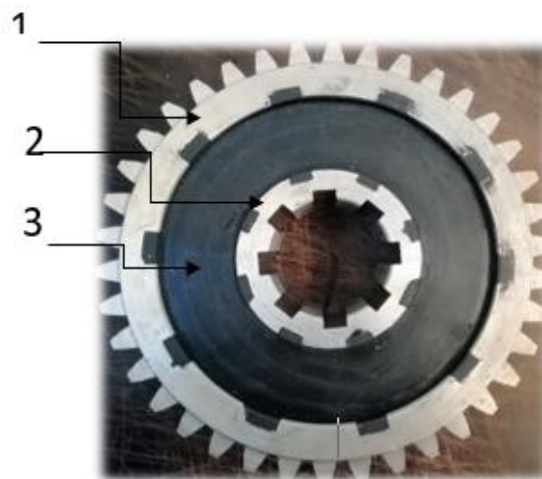
**Ключевые слова:** упругий элемент, зубчатый механизм, параметры, структурное исследование, кинематическое исследование, динамическое исследование, экспериментальный анализ, научно-технические решения.

Today, scientific research is being carried out at mining enterprises to create new effective designs of gear and flexible joint mechanisms widely used in technological machines, to conduct structural, kinematic and dynamic research to substantiate their parameters, and to develop their scientific and technical solutions. In this regard, special attention is paid to creating designs of gear reducers with composite, flexible

elements used in technological machine drives in mining production, reducing friction, wear and noise in gear mechanisms, and substantiating their technological operation processes and parameters.

As a result of experimental research, it was determined that the experimental version of the proposed reducer of the brand I2Y-160 provided for the determination of the torques, rotation frequencies and noise on the driven and driven shafts, taking into account the vibration amplitude of the gear wheel and the material of the gear wheel with a flexible element, rubber grades of different densities. The experiments were carried out at different working capacities [1, 2].

As noted above, in order to increase the operational performance of the reducer of the brand I2Y-160, a mechanism was used in the transmission mechanism, which included a gear wheel with a ring bushing with a flexible element. The gear wheel with a flexible element with the proposed gear wheel was manufactured using special press forms (Fig. 1).

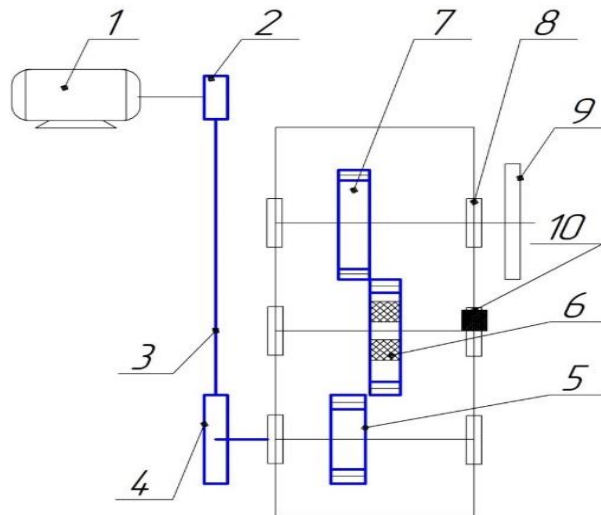


1-component gear wheel gear flange, 2-ring rubber bushing, 3-inner ring.

**Figure 1.** View of a gear wheel with a component belt element.

An electrotensometric scheme of the experimental stand of the I2Y-160 reducer, which transmits movement from one mechanism to another, was developed (Fig. 2). When the experimental stand is started, the electric motor 1 transmits the movement to the driving pulley 2 through the belt drive 3 and the driven pulley 4 to the driving gear 5. Then it transmits the movement to the gear 6 with the recommended belt element, and the movement is transmitted to the third gear 7. The movement is

transmitted to the brake drum 9 through bearings 8 fixed at both ends of the shafts. To measure the required values, data is transmitted to the computer through special sensors, such as Kvars and vibXpert 10, which are connected to the shaft in a half-bridge manner. These universal sensors allow measuring the torques, angular velocities, and noise on the shafts with the appropriate accuracy [3, 4].



1-electric motor, 2-driving pulley, 3-gear, 4-bearing, 5-brake drum, 6-vibXpert universal measuring instrument sensor, 7-gear wheel with belt element, 8-gear wheel, 9-belt, 10-driving pulley

**Figure 2.** Electrotensometric scheme of the experimental stent of the reducer brand И2Y-160

In order to increase the accuracy of the results obtained, the tests were repeated 3 times in the same mode.

Using a complex measuring instrument, the angular velocity, torque and noise of the shafts of the driving and driven gears of the modernized two-stage reducer of the И2Y-160 type with a gear wheel with a rubber bushing were determined by the tensometric method [5, 6].

Graphs of the dependence of the angular velocities of the input gear wheel shaft, the belt element and the output gear wheels of the modernized И2Y-160 type reducer installed in the transmission of the “Valuts” technological machine on the change in the friction torque on the working drum were constructed. It was found that when the depreciation belts are passed through the working drums in the technological machine, the increase in the technological resistance from them leads to a decrease in the angular velocities of the shafts in a nonlinear manner.

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## **SURUNKALI OBSTRUKTIV O'PKA KASALLIGI BO'LGAN BEMORLARDA YURAK FUNKSIONAL BUZILISHLARINING KLINIK AHAMIYATI**

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### **Annotatsiya**

Surunkali obstruktiv o'pka kasalligi (SOO'K) ko'pincha yurak-qon tomir tizimi tomonidan asoratlar bilan kechadi va bemorlar hayot sifatining pasayishiga olib keladi. Kasallik fonida rivojlanadigan surunkali gipoksiya va o'pka qon tomirlarida qarshilikning ortishi yurak funksional holatida muhim o'zgarishlar yuzaga kelishiga sabab bo'ladi. Ushbu ishda SOO'K bilan og'rikan bemorlarda yurak funksional buzilishlarining klinik ahamiyati tahlil qilindi. Tadqiqot natijalari o'ng qorincha yuklamasining oshishi, yurak urish tezligining o'zgarishi va o'pka gipertenziyasi belgilari bilan bevosita bog'liqlikni ko'rsatdi.

**Kalit so'zlar:** surunkali obstruktiv o'pka kasalligi, yurak funksiyasi, o'ng qorincha, o'pka gipertenziyasi, yurak yetishmovchiligi.

### **Asosiy qism**

Surunkali obstruktiv o'pka kasalligi (SOO'K) uzoq davom etuvchi va progressiv kechishi bilan tavsiflanib, nafas tizimi bilan bir qatorda yurak-qon tomir tizimida ham sezilarli funksional o'zgarishlarga olib keladi. Kasallik fonida alveolyar ventilyatsiyaning buzilishi va surunkali gipoksiya rivojlanadi. Ushbu holat o'pka qon tomirlarida reflektor vazokonstriksiya chaqirib, tomirlar qarshiligining ortishiga sabab bo'ladi. Natijada o'pka gipertenziyasi shakllanadi.

O'pka gipertenziyasining rivojlanishi o'ng qorincha uchun doimiy gemodinamik yuklama hosil qiladi. Dastlab bu holat kompensator mexanizmlar hisobiga kechsa-da, vaqt o'tishi bilan o'ng qorinchaning kengayishi, devorlarining qalinlashuvi va funksiyasining pasayishi kuzatiladi. Ushbu jarayonlar oxir-oqibat o'ng yurak yetishmovchiligi rivojlanishiga olib keladi va bemorlarning umumiy holatini og'irlashtiradi.

SOO'K bilan og'rikan bemorlarda yurak funksional holatini baholash klinik amaliyotda muhim diagnostik ahamiyatga ega. Elektrokardiografiya yurak ritmi va

o'ng yurak bo'limlaridagi yuklamani aniqlash imkonini bersa, exokardiografiya o'ng qorincha hajmi, o'pka arteriyasidagi taxminiy bosim va yurak qisqarish funksiyasini baholashda asosiy usul hisoblanadi. Ushbu tekshiruvlar yordamida yurak-qon tomir asoratlarini erta bosqichda aniqlash mumkin.

Klinik jihatdan yurak funksional buzilishlari SOO'K bo'lgan bemorlarda tez charchash, jismoniy yuklamaga toqatning pasayishi, yurak urishining tezlashuvi hamda periferik shishlar bilan namoyon bo'lishi mumkin. Ushbu belgilar ko'pincha nafas yetishmovchiligi simptomlari bilan birga kechadi va kasallikning og'ir bosqichlarida yaqqolroq kuzatiladi.

SOO'K bilan og'rigan bemorlarda yurak holatini muntazam monitoring qilish, davolash choralarini o'z vaqtida tuzatish va kompleks yondashuvni qo'llash yurak-qon tomir asoratlari rivojlanish xavfini kamaytirishga xizmat qiladi. Shu sababli yurak funksional holatini baholash ushbu bemorlarni kuzatishda muhim klinik ahamiyatga ega.

## **Xulosa**

Surunkali obstruktiv o'pka kasalligi yurak funksional holatiga salbiy ta'sir ko'rsatib, o'ng yurak yetishmovchiligi va o'pka gipertenziyasi rivojlanishiga olib keladi. Yurak funksional buzilishlarini erta aniqlash va kompleks yondashuv asosida baholash SOO'K bilan og'rigan bemorlarda asoratlarni kamaytirish va prognozni yaxshilashda muhim ahamiyatga ega.

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## **QADIMGI SIVILIZATSIYALARDA YOZUV MADANIYATI**

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The Culture of Writing in Ancient Civilizations

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### **Annotatsiya**

Ushbu maqolada qadimgi sivilizatsiyalarda yozuv madaniyatining shakllanishi va rivojlanishi tahlil qilinadi. Asosiy e'tibor Misr, Shumer, Hind va Xitoy sivilizatsiyalarining yozuv tizimlariga qaratiladi. Maqolada shumerlarning mixxat yozuvi, misrliklarning iyerogliflari, Hind vodiysi yozuvi hamda qadimgi xitoy ieroglifik yozuvining paydo bo'lish jarayoni, ularning jamiyat boshqaruvi, savdo, diniy e'tiqod va ilm-fan rivojidadagi o'rni yoritiladi. Shuningdek, yozuvning davlat boshqaruvi va madaniy merosni saqlashdagi ahamiyati ochib beriladi. Qadimgi yozuv tizimlari insoniyat tafakkuri va sivilizatsiya taraqqiyotining muhim bosqichi sifatida baholanadi.

### **Kalit so'zlar**

qadimgi sivilizatsiya, yozuv madaniyati, Shumer, Misr, Hind vodiysi, Xitoy, mixxat, iyeroglif, ieroglif yozuvi, davlat boshqaruvi, madaniy meros.

### **Annotation**

This article analyzes the formation and development of writing culture in ancient civilizations. Special attention is given to the writing systems of Egyptian, Sumerian, Indus Valley, and Chinese civilizations. The article examines the origin of Sumerian cuneiform script, Egyptian hieroglyphs, the writing system of the Indus Valley civilization, and ancient Chinese characters, as well as their role in state administration, trade, religion, and the development of science. Furthermore, the importance of writing in governance and the preservation of cultural heritage is highlighted. Ancient writing systems are evaluated as a significant stage in the development of human thought and civilization.

### **Keywords**

ancient civilization, writing culture, Sumer, Egypt, Indus Valley, China, cuneiform, hieroglyphs, script, state administration, cultural heritage.

### **Аннотация**

В данной статье рассматриваются формирование и развитие письменной культуры в древних цивилизациях. Особое внимание уделяется системам письма Древнего Египта, Шумера, цивилизации долины Инда и Китая. В статье анализируются происхождение шумерской клинописи, египетских иероглифов, письменности долины Инда и древнекитайской иероглифической системы, а также их роль в государственном управлении, торговле, религии и развитии науки. Подчеркивается значение письменности в управлении государством и сохранении культурного наследия. Древние системы письма рассматриваются как важный этап в развитии человеческого мышления и цивилизации.

### **Ключевые слова**

древняя цивилизация, письменная культура, Шумер, Египет, долина Инда, Китай, клинопись, иероглифы, письменность, государственное управление, культурное наследие.

Yozuv hayotimizning bir bo'lagidir. Shu sababli ham yozuv qadimiy tarixga egadir. Ma'lumki, insoniyat dahosi erishgan eng buyuk va muhim yutuqlardan biri yozuvning kashf etilishi hisoblanadi. Qadimda insonlar bir-biri bilan imo-ishoralar yoki maxsus belgilar orqali gaplashishgan. Bilamizki, o'qish va yozish hozirgi kunda keng rivojlangan. Lekin yozuvning paydo bo'lishi tilning paydo bo'lishichalik uzoq o'tmishga ega emas. Ma'lumotlarga ko'ra, yozuv tildan ancha keyin paydo bo'lgan ya'ni tovush tili taxminan 400-500 ming yillar ilgari yuzaga kelgan bo'lsa, yozuvning vujudga kelganiga 4-5 ming yillar bo'lgan. Og'zaki nutqning zamon va makon nuqtayi nazaridan cheklanganligi va uni bartaraf etish zaruriyati yozuvning paydo bo'lishiga olib keldi. Yozuv sababli insoniyat olami uchun keng imkoniyatlar ochildi. Uni taraqqiyot asoschisi desak adashmaymiz. Negaki, hozirgi kunda, aynan yozuv orqali ajdodlarimizning yaratgan, barpo etgan meroslari bilan tanishmiz. Agarda yozuv bo'lmaganda edi, ushbu meroslar biz uchun shunchaki, misli ochilmagan jumboq bo'lib qolgan bo'lardi. Ayniqsa, tilning insoniyat qo'lga kiritgan tajriba-bilimlarni saqlash va avlodlarga yetkazishdan iborat vazifasi ham bevosita yozuv orqali bajariladi. Kishilik jamiyati yaratgan bilim va tajribalar, kashfiyotlar, so'z san'ati durdonalari kabi qimmatli axborotlarning barcha- barchasi o'tmish madaniyatimiz, tariximiz haqidagi bugungi tasavvurlarimizning mavjudligi, tirikligi faqat yozuv tufaylidir. Shuningdek, yozuv bugungi shaklini olgunga qadar uzoq va tadrriy taraqqiyot yo'lini bosib o'tgan. Olimlar ham yozuvning bo'lishi va ahamiyati to'g'risida har xil fikrlarni bayon etishgan. Keling, yozuvning tarixiga ham nazar tashlasak. Qadimgi sivilizatsiyalar yozuvning kelib chiqishini Xudolarga bog'lashgan. Qadimgi misrliklar uchun ularning Xudosi Tot yozuvning, ba'zi bir hikoyalarda esa

nutqning yaratuvchisi ekanligini aytishgan. Qadimgi shumerlar va ossuriyaliklar ham qadimgi mayyalar singari yozuvning ma'lum Xudolardan kelib chiqqan deb hisoblashgan. Xitoy mifologiyasida yozuvning yaratilishi qadimgi donishmandga tegishli bo'lib, Xudolar bilan muloqot qilish uchun ishlatilgan. Shubhasiz, yozuvni hatto qadimiy tarixga ega xalqlar ham yuksak qadrlagan.

Paleografik tadqiqotlar bugungi kunda nafaqat qadimiy yozma manbaiar doirasini balki, ma'lum amaliy maqsadlarda so'nggi davrlar, hatto hozirgi zamon yozuv materiallarini tekshirishgacha amal qilmoqda. Olimlar yozuvni bundan V-VI ming yil avval Misr, Mesopotamiya, Xett, Hindiston va Xitoyda kashf etilgan, deb hisolashadi. Qadimgi Shumerda (Mesopotamiya) mil. av. IV ming yillikda mixsimon iyeroglif yozuvi kashf qilingan. Shumer yozuvlari suratli yozuvlar bo'lib aytmoqchi bo'lgan fikr surat shaklida aks ettirilgan. Lekin, suratli, so'zlar bilan ko'p narsani ifoda etib bo'lmagan va bu soddalashtirilib ponasimon mixxat yozuvi kashf etilgan. Mixxat belgili yozuvlar 600 dan ortiq bo'lgan. Bu yozuv III ming yillikda Shumerda ixtiro qilingan. Mesopotamiyaning Ur, Bobil, Ashur kabi shaharlarida kutubxonalar mavjud bo'lgan. Mixxat yozuvi Old Osiyoga keyinchalik Yevropa davlatlariga keng tarqalgan. Shulardan biri sifatida Misrda bundan VI-VII ming yil avval 750 belgidan iborat — rasmi iyeroglif kashf etilgan. Iyeroglif deganda birinchi bo'lib tasavvurimizga Qadimgi Misr va uning jumboq bilan to'la har xil maskanlari ko'z oldimizga keladi. Milodiy 391-yilda Vizantiya imperatori Feodosiy I imperiyadagi barcha budparast ibodatxonalar faoliyatiga chek qo'yadi. Bu harakat to'rt ming yillik an'anaga barham berdi va qadimgi Misr tilining 1500 yilga yo'qolishiga olib keladi.

Iyerogliflar misrliklar tomonidan «Xudoning so'zlari» deb atalgan va asosan ruhoniylar tomonidan ishlatilgan. Bu mashaqqatli chizilgan ramzlar ibodatxonalar devorlarini bezash uchun juda yaxshi foydalanilgan. Iyerogliflar qatorlar yoki ustunlar shaklida yoziladi va ularni chapdan o'ngga yoki o'ngdan chapga o'qish mumkin. Siz matnni qaysi yo'nalishda o'qilishi kerakligini ramzlar orqali farqlashingiz mumkin, chunki odam yoki hayvon figuralari har doim chiziq boshiga qarab turadi.

Misr yozuvida narsa va hodisalar turli xil rasm va belgilar bilan ifoda etilgan bo'lib zamonlar o'tishi bilan bu belgilar alifbo belgilariga aylangan. Qadimgi podsholik (mil. av. 2800-2250) davrida 24 ta tovushni bildiradigan alifbo paydo bo'lgan. 1822 yil Jak Fransua Shampalon Rozetta shahri yaqinida toshga o'yilgan bir xil mazmundagi Misr va Yunon yozuvlarini o'qishga muvaffaq bo'lgan (Rozetta toshi hozirgi kunda Londondagi Britaniya muzeyida saqlanadi). Misrliklar yozuvi o'ngdan chapga qarab yozilgan, shumerliklar yozuvi esa, chapdan o'ngga qarab yozilgan.

Shumerda (Mesopotamiya) mil. avv IV – ming yillikda mixsimon ieroglif yozuv kashf qilingan. Shumer yozuvlari suratli yozuvlar bo'lib, aytmoqchi bo'lgan fikr surat shaklida aks ettirilgan. Lekin suratli so'zlar bilan ko'p narsani ifoda etib bo'lmagan va

bu soddalashtirilib ponasimon mixxat yozuvning ixtiro etilishiga sabab bo'lgan. Mixxat belgisi yozuvlar 600 dan ortiq bo'lgan. Mesopotamiyaning Ur, Bobil, Ashur kabi shaharlarida kutubxonalar mavjud bo'lgan. Mixxat Yozuvi Old Osiyoga, keyinchalik Evropa davlatlariga keng tarqalgan<sup>1</sup>

Mixxat yozuvi dastlab xo'jalik va savdo hisob-kitoblari uchun ishlatilgan bo'lsa-da, keyinchalik diniy, adabiy va ilmiy matnlarni yozish vositasi sifatida keng tarqalgan, loy taxtachalarda saqlanishi qadimgi sivilizatsiyalarning tarixini bugungi kungacha yetib kelishida muhim ahamiyat kasb etgan va u qadimgi tillar hamda grammatika tizimlarini tadqiq qilishda asosiy manba bo'lib xizmat qiladi. Mixxat yozuvi ilk bor Mesopotamiya hududida – hozirgi janubiy Iroqdagi Uruk, Ur va Eridu shaharlarida – Shumer sivilizatsiyasida miloddan avvalgi 3100–3000 yillarda paydo bo'lgan.<sup>2</sup> Dastlab u piktografik shaklda bo'lib, ma'lumotlarni tasvirlar orqali ifodalagan. Masalan, bug'doy, echki yoki mol hisob-kitoblari loy taxtachalarga tasvirlangan. Vaqt o'tishi bilan piktogrammalar soddalashib, uchburchak va chiziqlardan tashkil topgan geometrik belgilar tizimiga aylangan. Loy taxtachalarga mix shaklidagi izlar tushirilgani sababli yozuv "mixxat" (cuneiform) deb nomlangan. Shu jarayonda Shumer yozuvi fonetik belgilar tizimiga o'tib, murakkab matnlarni yozishga imkon yaratgan.<sup>3</sup> Shumer yozuvi miloddan avvalgi III ming yillikda Bobil, Akkad, Ossuriya va Elam davlatlarida keng tarqaldi. Bobil davrida mixxat yozuvi grammatik jihatdan boyidi va fonetik belgilar ishlatilishi kuchaydi. Akkadlar esa yozuvni semitik tillarga moslashtirdi, bu esa uni turli mintaqalarda qo'llash imkonini berdi. Keyinchalik Xetlar, Hattilar va Eroning qadimgi xalqlari ham mixxat yozuvining o'z tillariga moslashgan shakllarini ishlab chiqdilar. Shu tarzda yozuv tizimi Mesopotamiya hududidan Markaziy Osiyo, Eron, Suriya va Anadoluga tarqaldi<sup>4</sup>

Hind yozuvi - mil.av. 3-2 ming yillikda 700 ga yaqin belgi - rasmdan iborat yozuv bo'lgan. Hind va Panjob viloyatlarida 700 belgidan iborat alifbo topilib, olimlarning fikricha, bu yozuvlar Shumer va Misr yozuvlari asosida vujudga kelganligi aniqlangan. Hind yozuvi taxminan 400 yoki, 250-300 belgi - rasmdan iborat bo'lgan shumer va xett yozuviga o'xshatiladi. Miloddan avvalgi V asrdan boshlab Hindistonda brahmi, kharoshthi, oramiy, gupta yozuvidan foydalanganlar. Hindistonda yozuv kamida 5 ming yillik tarixga ega. Dastlab o'qilgan yodgorliklar (mil. av. 3-a. ga mansub) keyingi yozuvlar uchun asos bo'lgan bo'g'inli brahmi yozuvida bitilgan bo'lib, bu yozuv chapdan o'ngga qarab yozilgan. Hindistonning shim.-g'arbida mil. av. III asrdan mil.av.V asrgacha brahmi bilan bir qatorda kharoshthi yozuvi ham mavjud bo'lgan, lekin keyinchalik sekin-asta brahmi tomonidan siqib chiqarilgan. Brahmi yozuvining

<sup>1</sup> Ma'ruzalar matni. Muqumiy nomli Qoqon davlat pedagogika instituti. 2008.

<sup>2</sup> Roux G. Ancient Iraq. Penguin Books, 1992. 67-78-b.

<sup>3</sup> Glassner J. J. The Invention of Cuneiform. Johns Hopkins University Press, 2003. 201-256-b.

<sup>4</sup> Saggs, H. W. F. The Greatness That Was Babylon. Sidgwick & Jackson, 1988. 501-552-b.

ilk yodgorliklaridayoq uning mahalliy ko‘rinishlari ajrala boshlaydi. keyinchalik ular asosida Hind yozuvining 3 asosiy; shim., jan. va jan.-sharqiy tarmog‘i shakllanadi.

Xitoy yozuvi - bundan IV ming yil avval kashf etilgan, Xitoy iyeroglifi dastlab Shan In davrida mil. av. II-ming yillikda kashf etilgan, shunday yozuvlaming turi 2 mingga yaqin bo‘lgan. Xan davrida iyerogliflar 12 soni 18 mingtaga etgan. Hozirgacha qisman o‘zgarishsiz saqlangan. Dastlab xitoyliklar suyak, yog‘och, cho‘p, teri va bambuk daraxtidan tayyorlangan taxtachalarga yozishgan, V asrdan boshlab ipak, shoyi parchasiga yozganlar.

Qadimgi Xitoy madaniyati, siyosiy tizimi va texnologiyalari bugungi kungacha Xitoy va butun dunyo tarixiga kuchli ta‘sir ko‘rsatib kelmoqda. Yozuv tizimi, konfutsiylik qadriyatlari va ilmiy yutuqlar hanuzgacha Xitoy jamiyatining ajralmas qismidir. Qadimgi Xitoy yozuvi bugungi kungacha saqlanib qolgan kam sonli yozuv tizimlaridan biri bo‘lib, uning evolyutsiyasi o‘ziga xos jarayonlarga boy. Xitoy yozuvining dastlabki namunalari eramizdan avvalgi XIV-XII asrlarga oid bo‘lgan "suyak yozuvlari" (甲骨文—jiǎgǔwén) da uchraydi. Ushbu yozuvlar asosan hayvonlarning suyaklari yoki toshbaqa qobiqlariga o‘yib yozilgan bo‘lib, ularning asosiy vazifasi diniy va bashorat qilish marosimlariga xizmat qilgan. Tadqiqotchilar bu yozuvlarning piktografik xususiyatga ega ekanligini aniqlashgan. Ya‘ni, bu belgilarda abstract tushunchalardan ko‘ra, real hayotdagi obyektlarning tasviri ifodalangan. Bu yozuvlarning rivojlanishi va madaniy ahamiyati dunyoda alohida e‘tiborga sazovor. Quyida qadimgi Xitoy yozuvi bilan bog‘liq yana bir qancha qiziqarli jihatlar yoritiladi. Xitoy yozuvi tarixchilarning fikricha, “Yin sulolasi” (er. avv. 1600–1046-yillar) davrida shakllangan. Eng qadimgi yozuvlar arxeologik qazishmalarda topilgan bo‘lib, ular “orakulsuyaklari” (toshbaqa qobiqlari yoki hayvonlarning suyaklariga o‘yib yozilgan yozuvlar)ga asoslangan. Ushbu yozuvlarda asosan diniy savollar, tabiat hodisalari va qishloq xo‘jaligi muammolari tasvirlangan. Qadimgi Xitoyda yozuv insoniyat tarixidagi eng qadimgi yozuv tizimlaridan biri bo‘lib, miloddan avvalgi 2-mingyillikda paydo bo‘lgan.

Bu yozuv tizimi asosan yirik daryo havzalari, xususan Xuanxe (Sariq daryo) atrofida rivojlangan. Qadimgi Xitoy yozuvi dastlab orakulyar yozuv sifatida tanilgan bo‘lib, u hayvon suyaklari va toshlarga o‘yib yozilgan. Bu yozuv usuli Shang sulolasi davrida (miloddan avvalgi 1600–1046 yillar) ishlatilgan.

Xitoy yozuv tizimi asrlar davomida o‘zgarib, hozirgi zamonaviy Xitoy iyerogliflariga asos bo‘lgan va hali ham dunyodagi eng qadimgi doimiy foydalanilayotgan yozuv tizimlaridan biridir. Qadimgi Xitoy yozuvi nafaqat til va yozuv tizimi sifatida, balki Xitoyning madaniy, falsafiy va tarixiy rivojlanishining muhim qismi sifatida ham katta ahamiyatga ega. Ushbu yozuv tizimi yordamida yaratilgan adabiy va falsafiy asarlar, jumladan, "Shijing", "Shujing", "Yijing" va Konfutsiy hikmatlari, qadimgi Xitoy

jamiyati va tafakkuri haqida qimmatli ma'lumotlar beradi.<sup>5</sup> Bu asarlar qadim zamonlardan boshlab axloq, siyosat, urush san'ati va tabiat qonunlarini tushunishga oid bilimlarni saqlab kelgan.

Qadimgi Xitoy yozuvi orqali yozilgan adabiyotlar bugungi kungacha o'z dolzarbligini saqlab qolgan va jahon madaniy merosining ajralmas qismiga aylangan.

Xulosa qilib ta'kidlash joizki, Qadimgi yozuvlar madaniyati insoniyat taraqqiyotida beqiyos o'rin tutadi. Maqolada yoritilgan Misr iyeroglif yozuvi, Shumer mixxati hamda Hind va Xitoy yozuv tizimlari qadimgi sivilizatsiyalarning ijtimoiy, siyosiy va madaniy hayotida muhim ahamiyat kasb etganini ko'rsatadi. Ushbu yozuvlar dastlab xo'jalik hisobi va diniy marosimlar ehtiyoji tufayli yuzaga kelgan bo'lsa-da, keyinchalik davlat boshqaruvi, qonunchilik, ilm-fan va adabiyot rivojiga xizmat qilgan.

Shumer mixxati insoniyat tarixidagi eng qadimgi yozuv tizimlaridan biri sifatida yozma madaniyatga asos soldi. Misr iyerogliflari diniy va ramziy mazmuni bilan ajralib turib, qadimgi misrliklarning dunyoqarashi va e'tiqodini aks ettirdi. Hind yozuvlari (xususan, Brahmi va boshqa qadimgi tizimlar) hamda Xitoy iyeroglif yozuvi esa Sharq sivilizatsiyalarining uzluksiz madaniy davomiyligini ta'minladi.

Umuman olganda, qadimgi yozuv tizimlari nafaqat axborotni saqlash va yetkazish vositasi, balki jamiyatning tafakkuri, ma'naviyati va tarixiy xotirasini ifodalovchi muhim madaniy merosdir. Ularning paydo bo'lishi insoniyatni og'zaki an'anadan yozma sivilizatsiyaga olib o'tdi va bugungi zamonaviy yozuv tizimlarining shakllanishiga mustahkam zamin yaratdi.

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