

O'ZBEKISTON RESPUBLIKASI
OLIV TA'LIM, FAN VA INNOVATSIYALAR VAZIRLIGI

ABDULLA QODIRIY NOMIDAGI
JIZZAX DAVLAT PEDAGOGIKA UNIVERSITETI
TABIIV FANLAR FAKULTETI

professori, kimyo fanlari doktori

SULTONOV MARAT MIRZAYEVICH

tavalludining 60 yilligiga bag'ishlangan

konferensiya materiallari



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ILM SARHADLARI

Sulstonov Marat Mirzayevich, 1964 yil 17 fevralda Andijon viloyati, Asaka shahrida tug’ilgan. Millati o‘zbek. Ma’lumoti oliy, 1986 yil Toshkent davlat universitetini kimyo o‘qituvchisi mutaxassisligi bo‘yicha tamomlagan.

Sulstonov Marat Mirzayevich- 1986-1988 yy. -Jizzax viloyati, Jizzax tumani 8-maktab o‘qituvchisi, 1988-1989 yy. - Toshkent tibbiyot instituti umumiy kimyo kafedrasida kichik ilmiy xodimi, 1989-1992 yy.- O‘zbekiston Respublikasi Fanlar Akademiyasi



polimerlar kimyosi va fizikasi instituti aspiranti, 1992-1994 yy. -O‘zbekiston Respublikasi Fanlar Akademiyasi polimerlar kimyosi va fizikasi instituti kichik ilmiy xodimi, 1994-1995 yy.- Jizzax davlat pedagogika instituti umumiy biologiya kafedrasida o‘qituvchisi, 1995-1996 yy. -Jizzax viloyati hokimligi fan va texnologiya ilmiy markazi ilmiy kotibi, 1996-1997 yy. - Jizzax davlat pedagogika instituti umumiy biologiya kafedrasida o‘qituvchisi, 1997-1998 yy. -Jizzax davlat pedagogika instituti umumiy biologiya kafedrasida katta o‘qituvchisi, 1998-2012 yy. -Jizzax davlat pedagogika instituti kimyo-ekologiya va uni o‘qitish uslubiyati kafedrasida mudiri, 2012-2018 yy. -Jizzax davlat pedagogika instituti ilmiy ishlar bo‘yicha prorektori, 2018 yil iyuldan hozirgi vaqtga qadar Jizzax davlat pedagogika universitetining kimyo va uni o‘qitish metodikasi kafedrasida mudiri lavozimidan ishlab kelmoqda.

Sulstonov Marat Mirzayevich universitetdagi pedagogik faoliyati mobaynida analitik kimyo va organik kimyo fanlarining o‘qitilishi, ta’lim jarayonini yangi pedagogik texnologiya asosida tashkil etish, ta’limda sifat ko‘rsatkichlariga erishish borasida chuqur izlanib, ijobiy natijalarga erishib kelmoqda. Shu bilan birga institutning o‘quv, ilmiy-uslubiy va ma’naviy–ma’rifiy ishlarini takomillashtirishga o‘z hissasini qo‘shib kelmoqda.

Sulstonov Marat Mirzayevich 1993 yil 30 aprelda professor B.L.Gofurov va professor S. Masharipovlar rahbarligida “Vinilxloridni to‘yinmagan benzoksazon hosilalari bilan sopolimerini sintez qilish va xossalari o‘rganish” mavzusidagi nomzodlik dissertatsiyasini, 2019 yil 5 martda professor E.Abduraxmonov ilmiy maslahatchiligida “Chiqindi va tutunli gazlar tarkibi monitoringi uchun avtomatlashgan termokatalitik usullarni ishlab chiqish” mavzusidagi doktorlik

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dissertatsiyasini muvaffaqiyatli himoya qilgan. Xalqaro va Respublika miqyosidagi ilmiy-amaliy anjumanlarda hamda OAK e'tirofidagi ilmiy jurnallarda 100 dan ziyod ilmiy maqolalari e'lon qilingan.

Sultonov Marat Mirzayevich rahbarligida kimyo o'qitish metodikasi bakalavr ta'lim yo'nalishining 100 dan ortiq talabalari bitiruv malakaviy ishlarini muvaffaqiyatli himoya qilgan. Bugungi kunda qadar 11 nafar magistrlik ilmiy darajasini olish uchun izlanuvchilarga ilmiy rahbarlik qilgan.

Sultonov Marat Mirzayevich “Термокаталитические методы определения состава выхлопных и дымовых газов” nomli monografiya, “Аналитическая химия”, “Fizik-kolloid kimyo” “Kimyo tarixi” nomli o'quv qo'llanmalar muallifi hisoblanadi.

Sultonov Marat Mirzayevich O'zbekiston milliy universiteti huzuridagi ilmiy darajalar beruvchi DSc.27.06.2017.K.01.03 raqamli Ilmiy Kengash va Samarqand davlat universiteti huzuridagi kimyo fanlari bo'yicha falsafa doktori (PhD) ilmiy darajasini beruvchi 03/30.12.2019.K.02.05 raqamli ilmiy Kengash va O'zbekiston Respublikasi oliy ta'lim, fan va innovatsiyalar vazirligi qoshidagi “Kimyo fanlari, kimyoviy texnologiya nanotexnologiyalar” yo'nalishi bo'yicha Ilmiy-texnik kengashlar a'zosi, sifatida ham faoliyat ko'rsatib kelmoqda.

Sultonov Marat Mirzayevich yuqori tashkilotlar tomonidan yuklatilgan vazifalar, universitet va fakultet tomonidan berilgan topshiriqlarni sidqidildan bajarganligi sababli “Xalq maorifi a'lochisi” ko'krak nishoni, vazirlik va universitet rektorining faxriy yorliq va sovg'alari bilan taqdirlangan.

Sultonov Marat Mirzayevich universitet jamoasi o'rtasida alohida e'tiborga ega pedagog, talabalarga bilim berish borasida talabchan va mehribon ustoz-murabbiylardan biridir. U doimiy ravishda o'z malakasini, siyosiy va ilmiy-nazariy saviyasini oshirish ustida sabr-toqat bilan ishlaydi.

EXTERNAL AND INTERNAL STRUCTURE OF CLAWED MOLLUSCS

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Annotatsiya. This article describes the qat orinaimed to study the external and internal structure mollyuskalarlarning in the department of biology bachelor degree of specialization that higher education institutions, students, graduates, schools, academic lyceums and biology teachers can use the same area.

Key words. Prosobranchia, Pulmonata Opisthobrauchia.

The modern fauna in the abdomen if there are more than 90 thousand legged mollyuskalarning types, many of them part of the sea and the ocean if he was living in fresh water and on land, lives in a little while. A number of families there to lead a life totally in the past abdominal oyoqlilar suddenly – a is sinif.

Foreign representative is available in the majority of abdominal mollyuskalarning legged sink if sink in the family and are representative of a certain generation reduktsiyaga, shakilda rudiment – a small plate to the sink and cover in the form of saved mantiya seem. The body was moved and mucous from the body in the case of chig'anog'i see a lot of the reason that the representatives of this class that had separated abdominal naked oyoqlilar includes the name of the slug.

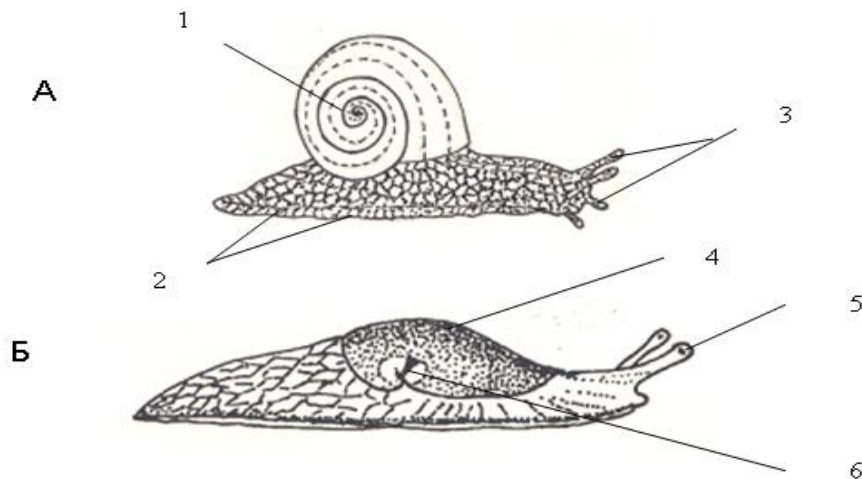
Abdominal legged mollyuskalarning study theoretical and practical terms is of great importance. The reason: the first group consists of getrogen if they come out of different animals in terms of the organization of complex, systematic groups that are far from each other in terms plays an important role in studying the evolution of.

Secondly, they mollyuskalarning fizologiyasini studying the clams conch is favorable compared to the object of research.

Thirdly, o'simlikxo'r polifag the bulk of them are animals, they are important to human life to various grain crops, vegetables and melons will do great harm with the fed.

Fourth, a number of types of livestock to the heavy ekzoparazit the master has the function of the space in the spread of diseases. Therefore, their taksanomik composition, biology, ecology and spread information on the type and number of measures to fight against harmful in the development of the control they are important.

External structure(1-picture). Gavin of three sections: head, body and feet that had separated the obvious it is known. Paypaslagichlar a pair or two in the beginning and eyes. Eye paypaslagichlar yonlarida the basis of some clams-vine, while the second pair to get shiliqqurtlarida paypaslagichlar three places.



1-picture. abdominal legged clams: A-*Xeropicta candaharica* B-*Deroceras caucasicum*. 1-a sink, 2-foot, 3-paypaslagichlar two pair, 4-mantiya, 5-eye, 6-mantiya slits.

By gavin abdomen of their feet, the foot will often be in the form of plaques. Clams foot with the help of soviet power walk, while some one are in the pool. They can cling tightly to the substrate using many oyoqlilar abdominal legs. Belonging to different generations, they will live a life of some abdominal oyoqlilar swimming in water. As an example, mollyuska of sea — *Carinarfa* — breast oyoqlilar can bring the.

Clams conch somewhat depending on the development of the spiral of abdominal legged gavin cho'ziq if gajak as wrapped. Many of shells spiralsimon packaging abdominal oyoqlilar despite konussimon qalpoqcha similar. Some abdominal legged mollyuskalarning (e.g., slug) shells (1-picture, B) reduktsiyalanish as a result of the internal organs of their qoplag'ich reduktsiyalanib gavin and gone to the upper part of the leg they are located.

Mantiya the mantiya cavity in located mantiya bodies of complex their into gets.

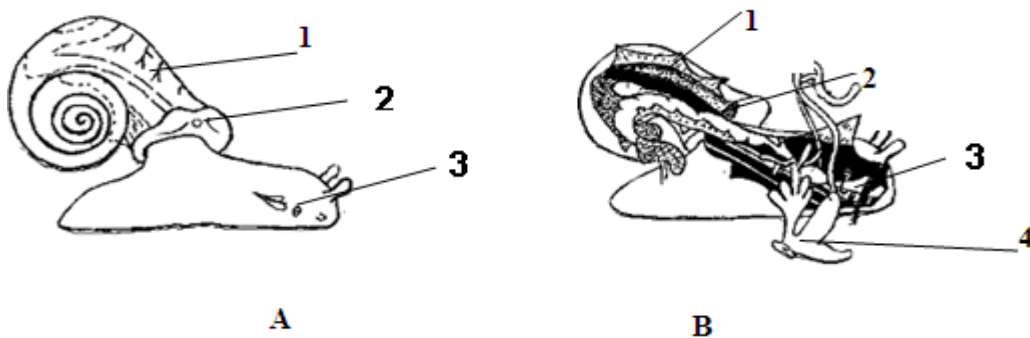
Abdominal oyoqlilar of internal structure (2-picture). *Food digestion to the system.* abdominal oyoqlilar of very many plants with the fed, but for them, among many wild , too , there are. Food digest to the body differences also feeding method due to formed have been. Mouth of the hole in the head bottom side is located.

Some wild representative in the head before the part is lengthened, xartum that ensure your will. Mouth of the hole of the mouth cavity through halqumga will take. Larynx one or two jag'lar and plastinkasimon muskulli tilcha of qirg'ich (radula) is. Larynx cavity of a pair of salivary gland way opened. Larynx much long into the

esophagus opens. the esophagus is the next part of goitre as is referred to. Oshqozone bo'shlig'iga liver the way opened.

Originally all the clams in the liver of the pair from the body is which. But gavin's of asimmetriya as a result, clams left side of the liver almost every time preserved, right side while reduktsiyalanib, lose is going to. Mollyuskalarning liver of a multiple, each with a different function it performs.

The liver the food digestion which gland as oziqning whole structural part (oqs fail to keep, fat, carbohydrate) digestion and make that enzymes separating out. Vertebrates animals with liver from the difference make, vertebrates are animals with liver of two gland function, that is — the liver with the stomach, under gland function performs. That in addition to clams, liver, tube - shaped gland bdie, him atalasimon nutrients it includes. The nutrients in the liver, the tube also digested will be, also is absorbed. From the stomach, then *the small intestine* comes from. This colon length, different in clams of any kind bdie and it 's a or a pinch gut of xalqa formed to be can.



2-picture. land mollyuskalarning internal structure *Xeropicta candaharica* example. A-conch're in the position view; 1-pulmonary veins, 2-a breath take it to the hole, 3-anal hole. B-internal structure; 1-seed taken when we had the 2-eggs way, 3-throat, 4- sex structure.

Respiratory organs. often a member of abdominal respiratory legged mollyuskalarning *ktenidial from jabra* is a rare pair, in most cases one ktenidiy saved. But, all abdominal ktenidiylar clams legged gets in. For example, o'clams with *pk-ktenidiy* will not be at Pulmonata. Because their mantiya cavity, the body adapted to breathe with no air - o'into *pk* has turned. The edges of the body mollyuskalarning mantiya a lung and breathing through the holes of the cavity is only going to grow join the mantiya makes contact with the external environment.

Qturning on the system. Their heart, *qorin far* , and one or rarely two *before bo'lmasidan heart* will consist of. Mollyuska in the heart of the arterial blood. When

the heart is reduced to (when she was sistola) blood from the ventricle *into the aorta* pass; turn from the two vessels of the aorta in *the aorta that go in the beginning* , and *which go into into the aorta* is divided. Clams lung — mantiya, which has become pulmonata to the edge of *gir lung rotary sinus* is located gavin poured the blood in him come. This sinus, which bring blood from the lungs to the blood vessels and heart goes out to him before a lot of which is transferred to the collector.

Sensory organs. Paypaslagichlar in the beginning, it performs the function of the feeling of the edge of the mantiya. On the basis of chemical osfradiylar ktenidiylar feeling fulfilled the function is located. The leaf on both sides of 100-150 Osfradiylar uzunchoq pushtachalardan if ktenidiylarga going at a glance is very similar.

Amount in leaf cells located ganglioz pushtachalarning a lot of nerves going.

In the beginning of paypaslagichlar previous pair of chemical effects to the sensitive it is, taste , and smell to know the organ of the function it performs.

Balance to maintain the body in a pair of closed bubbles in the form of. Bubbles of epiteliya a case-results and sensitive cells consists. Their toe'a shg'i fluid with filled. This liquid in a pinch finely lime toshcha of-statolitlar swimming walks. abdominal oyoqlilar the eyes of paypaslagichlar on the basis, sometimes the second pair of paypaslagichlar on top is located. Simply structured the eyes simple combs from is. More complex structured the eyes while in gavineach of and glass tanacha of the eye from the bladder is.

The reproductive system. abdominal oyoqlilar some sex (oldjabralilar) and germafrodit (lung, orqa jabra) be can. Sex glands of one of the ovaries or the testes from, germafrodit representative in germafrodit gland consists of. This gland seed and egg cells yield will. Male mollyuskalarning seed way up there.

Germafrodit a lung mollyuskalarning sex members of germafrodit gland and it with bog'liq germafrodit from the tube is. Tube into two separated, eggs and seeds in the way of yield will. The eggs of the way distended part of the uterus is called. Of the uterus, penis, vagina through sexual kloakaga is open. Itriva' way muskulli ko'shilish organ (penis) from within will take. joining the structure also to the uterus opening. Sex vagina again xaltasimon seed taken when had and lime nina bag on the way opens. Lime Nina join when the sex vagina into the wall when injected, it qitiqlaydi. Clams every time than fertilized.

Qorinoyoqli in the current period there are different visions on the classification of the class, but they last the literature data and the internet than three: *with the jabra front-Prosobranchia back jabra-Opisthobrauchia and a lung - Pulmonata* is to be the youngest in my class.

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