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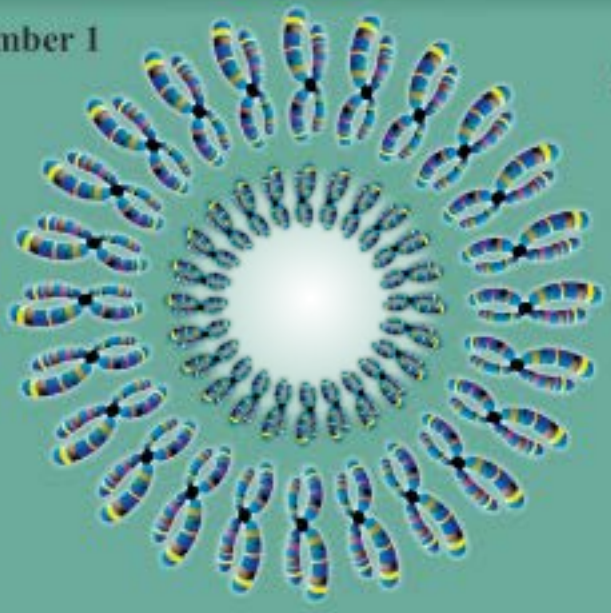

Editura Universității „Alexandru Ioan Cuza" din Iași

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CONTENT

A very tough year

Dear Authors and Readers

It was a tough year for each and all of us. The Covid-19 pandemics hit harder than we thought (at first) it will do.

The hardest hit came from life itself in its most cruel form, the loss of someone dear.
Our friend, Editor in Chief – Professor Vlad ARTENIE is now forever gone from our Editorial-Office.
Losing a family member is a difficult moment and it took a serious amount of time to move over.
Also, we, the family of JEMB, have the duty of go on.

We will keep the flame burning!

The Editorial Committee of JEMB

A plecat dintre noi un dascăl desăvârșit și un om special -
Prof. univ. dr. Vlad Artenie
(1936 -2020)

Doamne cum trece timpul! Parcă a fost ieri, deși au trecut de atunci cinci decenii. Un aspect dintr-un proiect de cercetare ne dădea bătăi de cap, mie și colegului Ion Băra, și cum ținea de domeniul biochimie, am căutat să-l rezolvăm în cadrul facultății pe care o absolvisem amândoi. Așa l-am cunoscut pe dr. Vlad Artenie, la ușa biroului căruia am bătut pentru a ne ajuta să ieșim din impas. Era vorba de pus la punct o metodă de dozare a alcaloizilor dintr-o plantă medicinală (*Vinca minor)*, care făcea obiectul unui contract de cercetare de mare valoare, perfectat cu Întreprinderea de Antibiotice din Iași. Domnul Vlad Artenie avea cu vreo șapte ani mai mulți ca noi, dar se întorsese nu demult de la un doctorat trecut cu succes la Universitatea ”M. V. Lomonosov” din Moscova, unde dobândise o bună experiență în ale biochimiei. După revenirea în țară, a avut o ascensiune didactică rapidă, astfel că după numai câțiva ani făcuse saltul de la asistent la conferențiar universitar în specialitatea Biochimie, Secția de Biologie a Universității ”Al. I. Cuza” din Iași. S-a implicat cu multă pasiune, dăruire și tenacitate, cu un efort demn de toată lauda în promovarea Biochimiei, fiind ctitorul acestui domeniu în universitate și apoi al Secției de Biochimie în cadrul Facultății de Biologie. Era prima oară când îl întâlneam, dar am avut surpriza plăcută să descoperim un om extrem de amabil și jovial, deschis colaborărilor științifice, interesat să se

A perfect educator and a special person departed from our midst –
PhD Professor Vlad Artenie
(1936 -2020)

My God, how fast time flies by! It feels like only yesterday and yet it has been five decades. As one aspect of a research project had become annoying to myself and my colleague Ion Băra, we tried to have it solved at the faculty from which we had both graduated, given that it pertained to biochemistry. It was my chance to meet dr. Vlad Artenie, on whose door I knocked to find a solution to our problem. This referred to a dosing method for alkaloids from a medicinal plant (*Vinca minor*), which was essential to a highly valuable research contract with Iasi Antibiotics Company. Mr. Vlad Artenie was eight years older than us, but he had just returned from a successful doctoral programme conducted at “M. V. Lomonosov” University of Moscow, where he had acquired rich experience in biochemistry.

Upon his return home, he enjoyed a fast academic “ascent” from a professor’s assistant position to that of associate professor in Biochemistry, within the Department of Biology of “Al. I. Cuza” University of Iași. He invested a lot of passion, dedication and tenacity, with a commendable effort in promoting Biochemistry, being the founder of this field at his university and, later, of the Biochemistry Department within the Faculty of Biology. The first time I met him, we had the pleasant surprise to discover an extremely kind and joyful man, open to scientific collaborations, interested in getting involved in other aspects of

implice și în alte aspecte ale biochimiei decât cele în care devenise specialist, un profesionist dornic să-și folosească expertiza în sprijinirea celor ce apelează la serviciile sale. Colaborarea noastră în cadrul acelui proiect s-a finalizat inclusiv cu un articol științific publicat împreună într-o revistă de profil, dar a fost prilejul stabilirii unei legături personale trainice, care s-a transformat treptat într-o aleasă și durabilă prietenie. Cred că puține au fost după aceea vizitele mele, nu puține, întreprinse la universitatea ieșeană, fără a-i călca pragul biroului de lucru, pentru a discuta diverse probleme personale, de cercetare, didactice, a proiectelor și realizărilor fiecăruia dintre noi etc.

La numai cinci ani după acel prim contact, profesorul Vlad Artenie avea să fie numit în comisia de susținere a tezei mele de doctorat, condusă de profesorul Corneliu Zolyneak, lucrarea în cauză fiind din domeniul radiobiologiei, dar conținând și multe date de ordin biochimic. Celor doi li s-au alăturat alți doi profesori de la institutele agronomice din Iași (Ion Gologan) și București (Marin Neagu), specialiști în ameliorarea plantelor. Am nimerit însă într-o perioadă în care, pentru susținerea publică a tezei de doctorat, era necesară o aprobare de la partid, dar nu se precizase însă de la ce nivel al acestuia, o aberație greu de priceput astăzi, dar așa stăteau lucrurile pe atunci. Până s-a decis ”organul” de decizie al partidului s-a scurs un an de zile, cu teza și toate referatele specialiștilor depuse la rectorat. Referatele membrilor comisiei erau foarte bune și apreciau munca și realizările mele, cu excepția celui întocmit de profesorul Neagu (aflat în prelungire de activitate) și prezentat ultimul, care se întindea pe nu mai puțin de 17 pagini și conținea o serie de observații critice. Cunoșteam conținutul acestui referat, ale cărui critici însă nu m-au afectat, pentru că eram conștient de valabilitatea rezultatele muncii mele. În plus, îndrumătorul științific îmi spusese să nu-mi fac griji, pentru că acesta era stilul de referate elaborate de prof. Neagu. Mă așteptam însă ca în ședința publică, după audierea comentariilor celorlalți colegi pe marginea tezei în discuție, acesta să se replieze cumva și să prezinte liber câteva aprecieri și concluzii (inclusiv critice) asupra lucrării, dar n-a fost să fie așa, ci a intrat în detalii care nu-și mai aveau rostul. Nefiind specialist în domeniul abordat în teză, profesorul Neagu îmi căutase practic nod în papură, multe din considerațiile sale fiind în contradicție evidentă cu ale celorlalți referenți. În final, a ”reușit” să se contrazică chiar și pe sine,

biochemistry than those in which he had become a specialist, eager to use his expertise in supporting those who appealed to his services. Our collaboration on that project ended with a scientific article published together in a scientific journal; moreover, it was the occasion to establish a long-lasting personal relationship, which gradually turned into an esteemed and lasting friendship. Few were the times of the many visits to the University of Iași that I would fail to pay him a visit to his office, to discuss and share various personal issues, research, teaching, projects and achievements, etc.

Only five years after that first contact, Professor Vlad Artenie was appointed as member of the committee for my doctoral thesis defence, led by Professor Corneliu Zolyneak, given that the paper in question was in the field of radiobiology, but also contained many biochemical data. The two professors were joined by two other professors from the agronomic institutes in Iași (Ion Gologan) and Bucharest (Marin Neagu), both specialists in plant breeding. However, I found myself at a time when, for the public defence of the doctoral thesis, an approval from the communist party was required, without specifying from what level, an aberration difficult to understand today, but that's how things were at that time. It took a year for the party's "decision-making body" to grant that approval, with the thesis and all the reports of the specialists submitted to the rector’s office. The reports of the members of the committee were very good and appreciated my work and achievements, except for the one submitted by Professor Neagu (in extension of activity), which covered no less than 17 pages and contained a series of critical remarks. I knew the content of this report, but its criticism did not affect me, because I was aware of the validity of the results of my work. In addition, the scientific advisor had told me not to worry, because this was the style of reports prepared by Prof. Neagu. However, I expected that, in the public meeting, after hearing the comments of the other colleagues on the thesis in question, he would somehow take a step back and present freely some appreciations and conclusions (including the critical ones) on the paper; it was only wishful thinking as he continued to dwell on pointless details. Not being himself a specialist in the field approached in my thesis, Professor Neagu had practically tried to find potential vulnerabilities, many of his considerations being in obvious contradiction with those of the other doctoral referees. In the end, he "managed" to

afirmând că prezentarea publică a tezei fusese mai elocventă decât teza în sine, o aberație și un non sens greu de înțeles, fiind de acord totuși cu conferirea titlului științific de doctor. Îmi aduc aminte, de parcă a fost ieri, nedumerirea, consternarea și chiar revolta profesorului Artenie, care nu pricepea de ce și de unde atâta lipsă de fair play, atâta adversitate gratuită a colegului său din comisie. A fost un moment care ne-a apropiat și mai mult. S-a purtat atunci cu mine ca un frate mai mare, sfătuindu-mă să nu iau în serios criticile neconstructive ale domnului Neagu și să-mi văd de calea mea, pentru că rezultatele pe care le obținusem în teză erau elocvente și valoroase (ele au făcut, de altfel, obiectul unei cărți publicate ulterior în Editura Academiei Române).

Vlad Artenie s-a născut la țară, în județul Suceava, cu câțiva ani înainte de a doua conflagrație mondială, într-o familie de agricultori. O perioadă grea din istoria țării, în care puțini tineri proveniți de la sate reușeau pe atunci să-și depășească condiția, să rupă cu tradiția și prin multă școală să ajungă specialiști de care țara avea mare nevoie. Înzestrat cu o minte ageră, sârguincios și ambițios fiind din fire, a parcurs treaptă cu treaptă greul urcuș - de la școala primară din satul Valea Glodului până la facultatea de chimie a universității ieșene, absolvită cu brio în 1959. Nu avea să-i uite niciodată pe toți cei ce au contribuit la formarea și împlinirea sa profesională, de la învățătorul din satul natal până la iluștrii profesori din timpul studenției. Un loc special ocupau în inima sa anii petrecuți și dascălii Liceului ”Nicu Gane” din Fălticeni, amintirile legate de acea etapă a vieții copleșindu-l de emoție chiar și la vârsta senectuții. A fost un fiu devotat al Bucovinei, pe care a slujit-o și onorat-o cum s-a priceput mai bine și la care s-a întors ori de câte ori a simțit nevoia să se inspire și să capete forța pentru a răzbi în viață și în proiectele sale.

Absolvind facultatea cu rezultate remarcabile și având aptitudini certe pentru activitatea de cercetare științifică, a fost reținut la catedra de chimie organică a Universității ”Al. I. Cuza” din Iași, specialitatea Biochimie. Suișul în profesie încă nu se încheiase. A urmat, așa cum am consemnat deja, cea mai dificilă treaptă a lui, cea a consacrării profesionale, etapă desăvârșită printr-un doctorat, urmat între 1963-1966 la cea mai prestigioasă universitate sovietică, ”M. V. Lomonosov” din Moscova, sub conducerea acad. Serghei Severin, un mare biochimist al vremii.

contradict himself, stating that the public presentation of the thesis had been more eloquent than the thesis itself, an aberration and a nonsense difficult to understand; however, he finally agreed with my being granted the scientific title of doctor. I remember, as if it were yesterday, the perplexity, dismay and even revolt of Professor Artenie, who did not understand why so much lack of fair play, so much gratuitous adversity on the part of his colleague in the committee. It was a moment that brought us even closer. He then treated me as if I were a younger brother, advising me not to take Mr. Neagu's unconstructive criticisms seriously and to go my own way, because the results I had obtained in the thesis were eloquent and valuable (they made, by the way, the object of a book later published by the Romanian Academy Publishing House).

Vlad Artenie was born in the countryside, in Suceava County, a few years before the Second World War, in a family of farmers. A difficult period in the country's history, in which few young people from the villages managed to overcome their condition at that time, to break with tradition and through much study to become the specialists that the country needed. Endowed with an alert mind, diligent and ambitious by nature, he gradually undertook his ascent – from the primary school in Valea Glodului village to the Chemistry Faculty of the University of Iași, graduated brilliantly in 1959. He would never forget all those who contributed to his training and professional fulfilment, from the master in his native village to the illustrious professors during his academic studies. The teachers of “Nicu Gane” High School from Fălticeni held a special place in his heart, together with the memories related to that stage of life which fondly overwhelmed him even at an old age. He was a devoted son of Bukovina, whom he served and honoured as best he could and to which he returned whenever he felt the urge to get inspired and gain the strength to break through in his life and projects.

Upon graduating from the faculty with remarkable results and having certain skills for the scientific research activity, he was retained at the Department of Organic Chemistry of “Al. I. Cuza” University from Iași, Biochemistry specialty. The peak of his career was yet to come. He followed, as we have already noted, his most difficult step, that of professional consecration, a stage completed by a doctorate, followed between 1963-1966 at the most prestigious Soviet university, "M.V. Lomonosov” University from Moscow, led by by

Revenit în țară se dedică trup și suflet Biochimiei, căutând s-o dezvolte continuu, să-i asigure un viitor cert, să-i creeze o baza umană și materială capabile să asigure nu doar instruirea studenților în acest domeniu, ci și abordarea unor aspecte tot mai complexe de cercetare în cadrul colaborării cu alți specialiști sau al unor contracte de cercetare perfectate cu diverși beneficiari. Printr-o muncă neobosită și bine făcută, devine în scurt timp un specialist reputat în ale Biochimiei, cunoscut și apreciat nu numai în țară, ci și în străinătate, promovat în diverse comisii de specialitate din centrul universitar Iași și la nivel național. Profesorul Artenie a trudit întreaga lui viață pe altarul Biochimiei, disciplină care în ultimii 50 de ani a devenit o adevărată vedetă printre științele biologice.

Despre activitatea și opera marelui dispărut au scris cu diverse ocazii și alți colegi, aspecte din biografia sa au fost de asemenea consemnate într-o serie de publicații naționale și internaționale. Recent (în 2016) a făcut-o în detaliu academicianul Constantin Toma, așa încât nu-mi rămâne decât să prezint sintetic unele din realizările de marcă ale profesorului Vlad Artenie. Aria preocupărilor sale în domeniul biochimiei a cuprins o paletă largă: de la enzimologie și biochimia proteinelor, la biochimie clinică și biochimia diverselor tipuri de organisme (vegetale, animale, microorganisme). Activitatea științifică s-a concretizat în publicarea a peste 250 de articole originale in extenso în reviste de profil din țară și din străinătate. La acestea se adaugă alte cca 130 de lucrări sub formă de rezumat apărute în volume ale unor manifestări științifice naționale și internaționale, 9 brevete de invenție, articole din istoria biologiei și chimiei, numeroase recenzii. Ca cercetător, a fost un apărător fervent al probității științifice, un dușman declarat împotriva celor tentați să măsluiască date științifice. A făcut parte din colectivele de redacție ale unor reviste de profil din țară, iar împreună cu profesorul Ion Băra, au fondat (în 1999) Seria de ”*Genetică și Biologie Moleculară*” (GBM) a Analelor Universității ”Al. I. Cuza” din Iași, fiind apoi redactorul șef al acesteia. Timp de 10 ani (între 1995 și 2004), împreună cu profesorul Jean Montreuil de la Universitatea de Științe și Tehnologii din Lille (Franța) au organizat ”Școala de vară franco-română de Biochimie” în cadrul Universității ”Al. I. Cuza” din Iași, activitate care s-a bucurat de mare audiență din partea celor interesați în acest domeniu al științei. Efortul academician Sergey Severin, a great biochemist of the time. Returning to the country, he dedicated himself entirely to Biochemistry, seeking to continuously develop it, to ensure a certain future, to create a human and material base capable of ensuring not only the training of students in this field, but also approaching more and more research aspects in collaboration with other specialists or in research contracts with various beneficiaries. Through a tireless and well-done work, he soon became a renowned specialist in Biochemistry, appreciated not only in the country but also abroad, promoted in various specialised boards in the university centre of Iasi and nationally. Professor Artenie has worked all his life on the altar of Biochemistry, a discipline that, in the last 50 years, has become a real star among the biological sciences.

Other colleagues also wrote about his activity and work on various occasions, aspects of his biography have also been outlined in a number of national and international publications. Academician Constantin Toma has recently (in 2016) done it minutely, so I can only briefly present some of the greatest achievements of Professor Vlad Artenie. His area of concern in the field of biochemistry covered a wide range: from enzymology and protein biochemistry, to clinical biochemistry and biochemistry of various types of organisms (plants, animals, microorganisms). The scientific activity resulted in the publication of over 250 original articles in extenso in specialised journals in the country and abroad. To these are added about 130 papers in the form of abstracts published in volumes of national and international scientific events, 9 patents, articles in the history of biology and chemistry and numerous reviews. As a researcher, he was an ardent defender of scientific probity and an outspoken enemy against those tempted to forge scientific data.

He was a member of the editorial board of some specialised magazines in the country, and together with Professor Ion Băra, founded (in 1999) the Series of "Genetics and Molecular Biology" (GBM) of the Annals of “Al. I. Cuza” University from Iași, being its editor-in-chief. For 10 years (between 1995 and 2004), together with Professor Jean Montreuil from the University of Science and Technology in Lille (France) organized the "Franco-Romanian Summer School of Biochemistry" at “Al. I. Cuza” University from Iași, an activity that enjoyed a large audience from those

susținut și activitatea prodigioasă a profesorului Artenie pe tărâmul cercetării științifice a fost recunoscută printr-o serie de premii de mare valoare: pentru una din lucrările publicate a primit în 1977 Premiul ”*Emanoil Teodorescu*” al Academiei Române, iar Consiliul Național al Cercetării Științifice din Învățământul Superior (CNCSIS) i-a acordat în 2011 prestigiosul premiu ”*Opera Omnia*”. A fost, de altfel, expert al acestui forum național, iar în cadrul universității ieșene a exercitat funcția de Director al ”Centrului de biochimie și genetică a celulelor vegetale și microbiene”.

Profesorul Vlad Artenie a fost însă și un dascăl minunat, înzestrat cu mult har didactic, cu o ținută academică impecabilă. Prelegerile lui se bucurau de mare audiență din partea studenților, masteranzilor și doctoranzilor, impresionând prin capacitate de sinteză, rigoare, logică, stil și manieră de prezentare. Nu mică mi-a fost mirarea, în urmă cu vreo zece ani, când două dintre colegele mai tinere ale profesorului mi-au mărturisit că participau din în când cu interes și mare plăcere la unele din cursurile susținute de el, pentru că le inspirau, pentru că aveau încă de învățat de la el. Câți dintre dascălii din învățământul superior dintotdeauna și de astăzi se pot lăuda cu o audiență atât de selectă?! A fost preocupat permanent să pună la dispoziția ”învățăceilor” un număr mare (13) de manuale și caiete de lucrări practice, care au jucat un rol important în instruirea studenților de toate gradele, mai ales înainte de 1990, când acest aspect în universități era unul deficitar. De-a lungul activității didactice de peste 50 de ani a coordonat realizarea a peste 300 de lucrări de licență, disertație și de obținere a gradului I în învățământul preuniversitar. A fost promovat la o vârstă tânără (46 de ani) conducător de doctorat, într-o perioadă în care nu era ușor să obții acest statut. În această calitate a ghidat, timp de cca trei decenii, activitatea unui număr impresionant (67) de specialiști (biologi, biochimiști, medici) în obținerea titlului de doctor în știință. L-am găsit adesea la lucru în laboratoarele Departamentului de Biochimie alături de doctoranzii săi, participând efectiv la rezolvarea unor aspecte de cercetare ale acestora.

Am avut onoarea ca după 1999 să fiu conducător de doctorat la Facultatea de Biologie a Universității ”Al. I. Cuza” și să desfășor la început această activitate chiar în catedra condusă pe atunci de profesorul Vlad Artenie. Am fost cucerit de atmosfera destinsă și constructivă care domnea pe

interested in this field of science. The sustained effort and prodigious activity of Professor Artenie in the field of scientific research was recognised by a series of valuable awards: for one of the works published in 1977 he received "Emanoil Teodorescu" Award of the Romanian Academy, while the National Council of Scientific Research in Higher Education (CNCSIS) granted him the prestigious “Opera Omnia” Award in 2011. He was, in fact, an expert of this national forum, and within the University of Iași he served as Director of the "Centre for Biochemistry and Genetics of Plant and Microbial Cells".

Professor Vlad Artenie was also a wonderful teacher, endowed with huge didactic talent and an impeccable academic attire. His lectures enjoyed a large audience from students, master’s degree and doctoral students, impressing with their ability to synthesize, rigour, logic, style and manner of presentation. I was not really surprised, about ten years ago, when two of the professor's younger colleagues confessed to me that they participated from time to time, with interest and great pleasure, in some of the courses he taught, because they inspired them, because they still had to learn from him. How many of the higher education teachers can boast these days about such a select audience?! He was constantly concerned with making available to "learners" a large number (13) of textbooks and practical workbooks, which played an important role in training students at all levels, especially before 1990, when this aspect in universities was a deficient one. Throughout his teaching activity for over 50 years, he coordinated the elaboration of over 300 bachelor's, dissertation and first degree works in pre-university education. He was promoted to a doctoral supervisor position at a young age (46 years old), at a time when it was not easy to obtain this status. In this capacity, he guided, for about three decades, the activity of an impressive number (67) of specialists (biologists, biochemists, doctors) in obtaining the title of doctor of science. I often found him working in the laboratories of the Department of Biochemistry with his PhD students, effectively participating in solving some of their research issues.

I had the honour to be a doctoral supervisor at the Faculty of Biology of “Al. I. Cuza” University and to conduct this activity after 1999 exactly in the department led at that time by Professor Vlad Artenie. I was captivated by the relaxed and constructive atmosphere that prevailed

atunci între colegi, de spiritul critic în care se desfășurau ședințele de catedră în care erau prezentate referatele științifice ale doctoranzilor și în care se spuneau lucrurilor pe nume fără nici o reținere și supărare. Fiind profesor titular la altă universitate, în semn de respect pentru colegii de la Iași, le-am cerut doctoranzilor mei să manifeste o grijă specială nu doar pentru conținutul, ci și pentru aspectul referatelor științifice prezentate, solicitându-le inclusiv broșarea acestora. Am apreciat receptivitatea profesorului Artenie, căruia i-a plăcut inițiativa mea și le-a cerut tuturor doctoranzilor din Catedra de Genetică, biochimie și microbiologie, pe care o coordona, să urmeze acest exemplu. Un fapt, altminteri mărunt, dar edificator în privința felului său de a fi și acționa, a lipsei de orgolii mărunte, de prejudecăți. De altfel, oricând s-au ivit probleme de cercetare în care D-Sa, sau eu, eram mai avizați să ne exprimăm o opinie, am făcut-o fără reținere, cu respectul cuvenit pentru competența în domeniul acoperit de fiecare dintre noi. Am fost cooptat ca referent în comisiile unor doctorate conduse de D-Sa și invers și întotdeauna am respectat rigorile impuse de acest statut, iar momentelor de susținere publică a doctoratelor le-am acordat împreună încărcătura potrivită, considerându-le prilejuri de adevărată sărbătoare nu doar pentru tinerii în cauză, ci și pentru noi, îndrumătorii lor. Activitatea didactică de mare calitate a profesorului Vlad Artenie nu putea trece neobservată, primind recunoaștere în 1988 prin acordarea de către Ministerul Învățământului a titlului de ”*conferențiar evidențiat*”, iar în 2007 a titlului de ”*profesor emerit*” de către Senatul Universității ”Al. I. Cuza” din Iași.

Profesorul Artenie a fost însă și un manager iscusit și neobosit. S-a dedicat cu totul propășirii domeniului său de lucru, contribuind totodată la bunul mers al treburilor în cadrul facultății. De-a lungul activității sale, dar mai ales după 1990, a exercitat rând pe rând diverse funcții în cadrul facultății: secretar științific al consiliului profesoral, șef de catedră, director al unui centru de cercetări. La nivel național, între 1994 și 2000, a fost cooptat în Consiliul Național de Evaluare și Acreditare Academică (CNEAA), organism de mare răspundere în organizarea învățământului superior din România. Să croiești o specializare nouă și un centru de cercetări pe profil în cadrul facultății, dar și o revistă în care să valorifici rezultate din domeniul Biochimiei, trebuie să recunoaștem că nu este o misiune ușoară. Or,

at the time among colleagues, by the critical spirit in which the chair meetings were held, in which the scientific papers of the doctoral students were presented and in which things were discussed openly, without any restraint and annoyance. Being a tenured professor at another university, as a sign of respect for my colleagues from Iași, I asked my PhD students to show special care not only to the content, but also to the aspect of the scientific papers presented, including their cover binding style. I appreciated the receptivity of Professor Artenie, who liked my initiative and asked all PhD students in the Department of Genetics, Biochemistry and Microbiology, whom he coordinated, to follow this example. This is a fact, otherwise insignificant, but revealing in terms of his way of being and acting, of his lack of petty pride and prejudice. In fact, whenever research problems arose in areas in which he or I were more inclined to express an opinion, we did so without restraint, with due respect for the competence in the field covered by each of us. I was appointed as a referent in the committees of some doctorates supervised by him and vice versa and I always respected the rigours imposed by this position, while the PhD public defences were treated by both of us with due consideration as occasions of true celebration not only for the young people in question, but also for us, their mentors. The high-quality teaching activity of Professor Vlad Artenie could not go unnoticed, which contributed to his receiving recognition from the Ministry of Education with the title of "highlighted associate professor" (1988), and from the Senate of "Al. I. Cuza" University from Iași which awarded him the title of "professor emeritus" (2007).

Professor Artenie was also a skilled and tireless manager. He dedicated himself entirely to the advancement of his field of work, while also contributing to the smooth running of affairs within the faculty. During his activity, but especially after 1990, he detained various managerial positions in the faculty: scientific secretary of the teaching council, head of department, director of a research centre. At national level, between 1994 and 2000, he was a member of the National Council for Academic Evaluation and Accreditation, a body of great responsibility in organising higher education in Romania. Tailoring a new specialisation and a research centre within the faculty, as well as founding a journal in which to capitalise on results in the field of Biochemistry was no easy mission.

profesorul Artenie s-a străduit și a reușit să pună în operă toate aceste proiecte îndrăznețe. Cu un moment dificil, traversat însă cu brio, a fost confruntat la începutul anilor 1990, când a trebuit să mute cu totul activitatea grupului său de lucru dintr-o clădire în alta a universității, să reorganizeze și să amenajeze corespunzător laboratoarele didactice și de cercetare științifică în alte condiții. A făcut-o fără șovăială, conștient de misiunea sa de lider al domeniului, cu mult spirit de răspundere și un efort greu de imaginat și evaluat, secondat de toți colegii din catedră.

Mai presus de toate meritele sale profesionale și organizatorice, de realizările în știință și în munca de formare a multe generații de specialiști în domeniul Biochimiei, rămâne OMUL Vlad Artenie, de la care oricare dintre noi avea ce învăța: cum să-ți duci la îndeplinire proiectele fără să lezezi pe nimeni, cum să-ți atragi adepți fără să determini tensiuni, cum să acționezi ca să ai în jurul tău liniște creatoare și concordie, cum să-i respecți pe alții ca să fii tu însuți respectat, cum să satisfaci orgoliile și interesele uneori divergente ale colaboratorilor fără să renunți la principii etc. Am cunoscut mulți oameni în viața mea, dar pentru mine Vlad Artenie rămâne unicat, o pildă de echilibru, blândețe, amabilitate, înțelepciune, modestie, onestitate, generozitate, o anumită cumințenie, solicitudine, spirit de sacrificiu, un adevărat model uman. Într-o lume atât de răvășită precum e cea a zilelor noastre, oameni clădiți pe tiparul său se întâlnesc tot mai rar. Fericiți cei ce au avut acest privilegiu în viața lor!

Nu credeam să ajung să vorbesc la trecut despre bunul meu coleg și prieten Vlad Artenie, dar uite că destinul așa a decis. E o misiune de care consimt să mă achit cu emoție, cu o anumită sfială și delicatețe, ca să nu-i tulbur somnul etern. E trist și greu de suportat momente precum acesta, când te despărți de oameni dragi, de oameni cu care ai împărțit bune și rele timp de decenii în șir! Profesorul Vlad Artenie a plecat dintre noi conștient că și-a făcut pe deplin datoria, dar și cu o anumită amărăciune, pentru că nu toți cei pe care îi ajutase să-i fie alături la catedră s-au dovedit demni de o asemenea încredere. Într-un mesaj din vara lui 2017, îmi scria: ”*Mesajul dumneavoastră a avut darul de a mă încânta, ca întotdeauna. Vă mulțumesc pentru bucuria pe care mi-ați făcut-o. Știu s-o apreciez, fiind convins că totul pornește din inimă și nu este de complezență, cum am bafta să beneficiez pe aici de la unii care, chipurile, tare mă*

However, Professor Artenie worked hard and managed to implement all these bold projects. He faced a difficult time, but went through it brilliantly, in the early 1990s, when he had to completely move the activity of his working group from one university building to another, reorganise and arrange the teaching and scientific research laboratories accordingly in other conditions. He did it without hesitation, aware of his mission as a leader in the field, with a lot of responsibility and an effort difficult to imagine and evaluate, seconded by all colleagues in the department.

On top of all his professional and organisational merits, the achievements in science and the training of many generations of specialists in the field of Biochemistry, there remains the MAN Vlad Artenie, from whom each of us had something to learn: how to conduct projects without harming anyone, how to attract followers without causing tension, how to act to have creative peace and harmony around you, how to respect others to be respected yourself, how to satisfy pride and the sometimes divergent interests of collaborators without renouncing our principles, etc. I have known many people in my life, but for me, Vlad Artenie remains unique, an example of balance, gentleness, kindness, wisdom, modesty, honesty, generosity, a certain kindness, solicitude, spirit of sacrifice, a true human model. In a world as tumultuous as it is today, people built on his pattern are becoming less and less common. Blessed are those who have had this privilege in their lives!

I never thought I would get to talk about my good colleague and friend Vlad Artenie using past tense, but destiny decided so. It is a mission that I agree to fulfill with emotion, with a certain shyness and delicacy, so as not to disturb his eternal sleep. It is sad and hard to bear moments like this, when you part with your beloved ones, with people who were there for you for better or for worse for whole decades! Professor Vlad Artenie left us being aware that he had done his duty fully, but also with a certain bitterness, because not all those whom he had helped at the department proved worthy of such trust. In a message from the summer of 2017, he wrote to me: “*Your message had the gift of delighting me, as always. Thank you for the joy you have given me. I know how to appreciate it, being convinced that everything starts from the heart and is not an act of complacency, from which I am lucky to benefit with some who, apparently, still love me very much*.” In recent years, the professor spent a

mai iubesc.” În ultimii ani profesorul petrecea o mare parte din sezonul favorabil la țară, la casa părintească, locul de care nu te poți despărți cu adevărat niciodată, care te atrage ca un magnet. Se simțea acolo în elementul său, pentru că acasă rămâne întotdeauna locul și casa în care te-ai născut, se bucura de ceea ce-i oferea acel loc binecuvântat, precum un bun gospodar care se îngrijește de toate, inclusiv de animalele din ogradă. Iată cum îmi relata, în același mesaj, întâlnirea cu ”paznicul” permanent al casei: *”... am fost la Suceava, la casa părintească, care acum îi aparține surorii mele. Între alte treburi, am construit și o cușcă pentru o fleșțe de câine, de fapt este o ea și o cheamă Leila. Eu o iubesc mult pentru că dă semnalul când ajung la poarta curții în care se zbenguie. Apoi, mă provoacă la joacă, parcă ar fi un copil mic*.” Câtă tandrețe în aceste câteva rânduri!

Odată cu încheierea în 2015 a activității mele ca îndrumător de doctorate la Iași m-am văzut mai rar cu profesorul Artenie, dar am fost mereu în contact prin intermediul telefonului. Spre sfârșitul anului trecut am aflat de la dumnealui că a suferit o operație și că nu se simte prea bine după efectuarea ei, dar ulterior lucrurile păreau să meargă într-o direcție bună, astfel încât mi-am permis să-i trimit spre publicare în Anale, Secțiunea JEMB (”Journal of Experimental and Molecular Biology”, titlul schimbat în 2018 al seriei GBM), două materiale: un omagiu postum adus universitarului Gabriel Corneanu (plecat dintre noi anul trecut), și o recenzie a cărții lui Siddartha Mukherjee ”*The Gene: An Intimate History*” (tradusă și la noi în 2018). Pe la jumătatea lui februarie am primit un mesaj prin e-mail de la domnul profesor, în care îmi transmitea printre altele: ”*Azi, după amiază* (15.02.2020, n.a.)*, m-am delectat cu cele două materiale pe care mi le-ați trimis pentru JEMB. Mi-a făcut o mare plăcere să aflu mai întâi lucruri neștiute de mine despre distinsul coleg Gabriel Corneanu. Apoi, mi s-a părut foarte interesantă cartea pe care o prezentați în recenzie….. În încheiere, vreau să vă spun că am rămas încântat de felul cum creionați portretul domnului Corneanu. De asemenea recenzia cărții este redactată de un talentat scriitor. Felicitări pentru ambele prezentări!*” Avea să fie acesta ultimul mesaj scris primit de la el și o nouă dovadă a prieteniei sincere ce ne lega de cinci decenii, a faptului că nu avea o problemă să recunoască meritele celui de alături. Am continuat să ținem large part of warm season in the countryside, at his parents' house, the place one can never really part with, as it attracts us like a magnet. He felt more at ease there, as the place and the house where we were born always remain our home; he enjoyed what that blessed place offered him, like a good housekeeper who takes care of everything, including the animals in the yard. This is how he descried to me, in the same message, the meeting with the permanent “guardian” of the house: “*I went to Suceava, to my parents' house, which now belongs to my sister. Among other things, I built a cage for a favourite dog, in fact it is a female dog and her name is Leila. I love her a lot because she signals when I get to the gate of the courtyard where she is frolicking. Then she challenges me to play, as if she were a small child*." What tenderness in these few lines!

With the end of my activity as a doctoral supervisor in Iași in 2015, I rarely saw Professor Artenie, but I was always in contact by phone. Towards the end of last year I found out from him that he had undergone an operation and that he was not feeling well after it, but then things seemed to be going in the right direction, so I took the liberty to send him for publication in *Annals*, JEMB Section ("Journal of Experimental and Molecular Biology", the title changed in 2018 of the GBM series), two materials: a posthumous tribute to the academic Gabriel Corneanu (who left us last year), and a review of Siddartha Mukherjee's book "The Gene: An Intimate History” (translated in 2018). Around mid-February, I received an e-mail message from the professor, in which he wrote to me, among other things: “*Today, in the afternoon* (15.02.2020), *I enjoyed the two materials you sent me for JEMB. It gave me great pleasure to first find out things I did not know about my distinguished colleague Gabriel Corneanu. Then, I found the book you presented in the review very interesting…. In conclusion, I want to tell you that I was delighted with the way you draw the portrait of Mr. Corneanu. The book review is also written by a talented writer. Congratulations on both presentations*!”

This would be the last written message I received from him and new evidence of the sincere friendship that bound us for five decades, of the fact that he had no problem recognizing the merits of his kin. We kept in touch by phone. The last time I called him was immediately after overcoming the state of emergency (May 17, I think) imposed by

legătura telefonic. Ultima dată l-am sunat imediat după depășirea stării de urgență (pe 17 mai, cred) impusă de pandemia provocată de Covid-19 să văd cum se mai simte și cum s-a descurcat în cele două luni de izolare la domiciliu. Am fost bucuros să aflu că se simțea mult mai bine și urma să treacă din când în când pe la facultate pentru a urgenta apariția primului număr din acest an al JEBM. Nu-mi imaginam atunci că sfârșitul acestui adevărat "om între oameni" era atât de aproape și că în curând mă voi despărți de el pentru totdeauna și-i voi omagia personalitatea, așa cum o făcusem cu câteva luni înainte pentru profesorul Corneanu.

Prin dispariția profesorului Vlad Artenie, Universitatea "Al. I. Cuza" din Iași pierde pe unul dintre cei mai devotați și pricepuți dascăli și cercetători pe care i-a avut în ultima vreme, un om de mare calitate, care s-a străduit întreaga lui viață profesională să fie la înălțime, să contribuie cu toată energia de care a dispus la dezvoltarea domeniului său de lucru - Biochimia, la formarea unui număr impresionant de specialiști în acest domeniu. Tuturor celor ce l-am cunoscut, colegi și prieteni, ne va lipsi Omul Vlad Artenie, bun la toate, plin de bunăvoință și solicitudine, principial, iubitor de oameni și pasionat de meseria lui. Ne-om aminti mereu de aici înainte figura distinsă și luminoasă a acestui om special, chipul lui blând, cald și prietenos, omul modest și onest care nu a uitat nici un moment de unde a plecat și unde a ajuns. Fie ca Bunul Dumnezeu să-i rezerve acolo unde a plecat un loc pe măsura firii sale și zestrei pe care ne-a lăsat-o!

the pandemic caused by Covid-19 to see how he feels and how he managed the two months of isolation at home. I was glad to find out that she was feeling much better and intend to visit the faculty from time to time to speed up the release of this year's first issue of JEBM. I did not imagine then that the end of this true "man among men" was so near and that I would soon part with him forever and I would pay homage to his personality, as I had done a few months before for Professor Corneanu.

With the disappearance of Professor Vlad Artenie, "Al. I. Cuza" University from Iași loses one of the most devoted and skilled teachers and researchers he has had lately, a man of great quality, who has strived his entire professional life to contribute with all his energy to the development of his field of work – Biochemistry – and to the training of an impressive number of specialists in this field. All those who knew him, colleagues and friends, will miss the Man Vlad Artenie, good at everything, full of goodwill and solicitude, a lover of people and a principled man passionate about his profession. We will always remember from now on the distinguished and bright figure of this special man, his gentle, warm and friendly face, the modest and honest man who never forgot where his life began and where it reached. May God reserve him where he left a place worthy of his good nature and his heritage left to us!

6.07.2020
Prof. univ. dr. Gogu Ghiorghiță

Gena ca o poveste

Mukherjee Siddhartha, *Gena: o istorie fascinantă*. Editura ”ALL”, 2018, București, 556p; (traducere în română a cărții *The Gene: An Intimate History*. Scribner Publ, 2016, 592p).

Spre sfârșitul lui 2019 mă aflam în preajma ”Casei Cărții” din Piatra Neamț, în care nu mai intrasem de ceva vreme. Așteptam pe cineva din familie, aflat la o clinică din zonă și, ca să ”omor” timpul, am intrat în librărie să văd ce noutăți editoriale au mai apărut. Printre rafturile pline cu cărți am observat și două măsuțe pe care erau expuse câteva, iar una dintre ele mi-a atras atenția, pentru că pe coperta ei avea un titlu mare - ”*GENA*”. În primul moment am crezut că e vorba de un roman, dar luând-o în mâini și privind-o îndeaproape am constatat că titlul era însoțit de o imagine grăitoare și de subtitlul ”*o istorie fascinantă*”, care îmi spunea că de fapt era o carte dedicată unității materiale a eredității viului - *gena*. Fiind pe un teren familiar mie, n-am stat pe gânduri să mi-o procur, fiind curios să văd maniera în care abordează autorul ei, Siddhartha Mukherjee, una dintre marile descoperiri ale omenirii.

Nu a fost nevoie să intru prea adânc în lectura ei ca să-mi dau seama că autorul nu este doar un bun cunoscător al domeniului, un erudit în ale biologiei, ci și un talentat scriitor. Nu doar istoria genei este fascinantă, așa cum precizează autorul încă din titlu, ci și spectacolul oferit de el prin modul de a-i prezenta secretele, care te provoacă, te incită. E ca un roman polițist, având ca ”făptaș” gena și acțiunile sale, care te face să nu lași cartea din mână până nu ajungi la capătul ei. Capacitatea autorului de a decripta și de a face asimilabile, chiar și pentru nespecialiștii interesați, informații științifice atât de vaste și complicate, este admirabilă.

The gene as a story

Mukherjee Siddhartha, *Gena: o istorie fascinantă*. Editura “ALL”, 2018, București, 556p; (*The Gene: An Intimate History*. Scribner Publ., 2016, 592pp).

By the end of 2019, I happened to be in the vicinity of “Casa Cărții”, a book shop from Piatra Neamț that I had not visited for some time. I was waiting for a family member who was at a clinic in the area, so, to kill time, I entered the book shop to check the latest publications. Among the book-filled shelves, I could notice two tables with books on display, of which one drew my attention due to a title written in large type on its cover – THE GENE. At first, I thought it was a novel, but, when taking it into my hands, I could notice an illustrative image and an intriguing subtitle – *an intimate story* – which actually announced a book on the material unit of living matter heredity – *the gene*. Being on familiar ground, I did not hesitate to purchase it, being curious to observe the approach adopted by its author, Siddhartha Mukherjee, to one of the greatest human discoveries.

I did not need to read it too intensely to realise that the author is not only an expert in the field, a scholar in biology, but also a talented writer. In addition to the history of the gene being an “intimate” one, as the author states in the title, the show he offers through the way in which he presents his secrets provokes and excites you. It's like a detective story, having as its “perpetrator” the gene and its actions, which makes you not leave the book until you have reached the end. The author's ability to decipher and popularise, even for non-interested specialists, such vast and complicated scientific information, is admirable. The path taken in genetics over 150 years, from Mendel’s hereditary factors to the transgenic and gene therapy operations nowadays, is an

Drumul parcurs de genetică în cei 150 de ani, care au trecut de la factorii ereditari ai lui Mendel până la operațiile de transgeneză și terapie genică din zilele noastre, este unul incredibil, de-a dreptul uluitor, iar iscusința lui Siddhartha Mukherjee de a-l zugrăvi în toată măreția și splendoarea lui este demnă de toată lauda. Dar,

Să facem mai întâi cunoștință cu autorul cărții.

Siddhartha Mukherjee este biolog, medic hematolog și oncolog, dar și un reputat scriitor american. S-a născut în India (în 1970), unde s-a și școlarizat până la vârsta de 19 ani. Beneficiind apoi de o bursă Rhodes, a obținut licența în Biologie la Universitatea Stanford, perioadă în care a lucrat în laboratorul lui Paul Berg, laureat al Premiului Nobel. Și-a continuat studiile cu un doctorat în imunologie la Universitatea din Oxford, după care a urmat Harvard Medical School, la care a obținut și titlul de doctor în medicină. Din 2009 este Assistant Professor of Medicine at Columbia University, iar grupul său de cercetare studiază hematopoietic stem cells (HSCs), the precursors of the cellular components of blood, and their microenvironment. Osteoblasts, cells that form bone, and componente principale ale acestui mediu, reglează formarea și dezvoltarea celulelor sangvine. Dereglarea procesului stă la baza unor tipuri de cancer ale sângelui, precum myelodysplastic syndrome and leukemia. Grupul de cercetare al dr. Mukherjee a identificat unele gene that regulate HSC quiescence și a unor compuși care pot altera micromediul HSC. Rezultatele acestor cercetări au fost publicate în reviste de prestigiu precum *Nature*, *Cell*, *Neuron*, *The New England Journal of Medicine*, dar și în ziare de mare audiență ca *The New Yorker*, *The New York Times* etc.

Cum precizam anterior, Siddhartha Mukherjee este cunoscut nu doar ca specialist în hematologie și oncologie, ci și ca medic-scriitor, remarcându-se prin câteva cărți scrise cu mult talent. Prima dintre ele, "*The Emperor of All Maladies: A Biography of Cancer*", apărută în 2010, s-a bucurat de mare succes, fiind onorată în 2011 cu premiul Pulitzer (categoria non-ficțiune) și listată în the "*All Time 100 Notification Books*". În 2015 a publicat o altă carte interesantă și anume "*The laws of Medicine: Field Notes from an Uncertain Science*", în care a abordat preceptele mai puțin cunoscute care guvernează medicina, iar în 2016, cum s-a consemnat deja, a publicat cartea "*The gene: An Intimate History*", considerată de The Washington Post and The New York Times "*as one of the most influential books of 2016*".

Încă din prologul acestei cărți, autorul ne informează, dar și avertizează, că ea "*reprezintă istoria nașterii, dezvoltării, influenței și a viitorului uneia dintre cele mai puternice și mai periculoase idei din istoria științei:"gena*". Ne vom întreba desigur: în ce constă acest pericol? Răspunsul vine peste câteva paragrafe ale cărții și sună cama așa: "*E un lucru să încerci, să înțelegi cum influențează genele identitatea, sexualitatea sau temperamentul uman și cu totul altceva să-ți imaginezi modificarea identității, sexualității sau a temperamentului prin acțiuni directe asupra genelor*". Profesorul incredible one, really astonishing, and Siddhartha Mukherjee's skill in depicting it in all its greatness and splendour is worthy of all praise. But we had better know the author of the book first.

Siddhartha Mukherjee is a biologist, a hematologist and an oncologist, but also a reputed American writer. He was born in India (in 1970), where he was educated until he was 19 years old. After receiving a Rhodes scholarship, he obtained his degree in Biology at Stanford University, during which time he worked in the laboratory of Paul Berg, a Nobel laureate. He continued his studies with a doctorate in immunology at the University of Oxford, followed by Harvard Medical School, where he also obtained his doctoral degree in medicine. Since 2009, he is an Assistant Professor of Medicine at Columbia University and his research group studies hematopoietic stem cells (HSCs), the precursors of the cellular components of blood, and their microenvironment. Osteoblasts, cells that form bone, and major components of this environment, regulate the formation and development of blood cells. The disfunction of the process is the basis of some types of blood cancer, such as myelodysplastic syndrome and leukemia. Dr. Mukherjee's research group has identified some genes that regulate HSC quiescence and some compounds that may alter the HSC microenvironment. The results of these researches have been published in prestigious journals such as *Nature, Cell, Neuron, The New England Journal of Medicine*, but also in popular newspapers such as *The New Yorker, The New York Times*, etc.

As mentioned earlier, Siddhartha Mukherjee is known not only as a specialist in hematology and oncology, but also as a physician-writer, becoming prominent through several highly talented books. The first of them, "*The Emperor of All Maladies: A Biography of Cancer*", published in 2010, was very successful, being honoured in 2011 with the Pulitzer Prize (non-fiction category) and listed in the "*All Time 100 Notification Books*". In 2015, he published another interesting book, *"The Laws of Medicine: Field Notes from an Uncertain Science*", in which he addressed the lesser-known precepts that govern medicine; in 2016, as already noted, he published the book "*The Gene: An Intimate History*", considered by *The Washington Post* and *The New York Times* "as one of the most influential books of 2016".

Starting with the prologue of this book, the author equally informs and warns us that it "*represents the history of the birth, development, influence and future of one of the most powerful and dangerous ideas in the history of science: "the gene"*. Of course we will ask ourselves: what is this danger? The answer comes over a few paragraphs of the book and sounds like this: "*It's one thing to try, to understand how genes influence human identity, sexuality or temperament, and to imagine something else changing your identity, sexuality or temper by direct actions on genes*". Professor Mukherjee believes that: "*The 20th century was marked by three deeply*

Mukherjee consideră că: ”*Secolul 20 a fost străbătut de trei idei ştiinţifice profund destabilizatoare, care l-au împărţit în trei perioade inegale: atomul, bit-ul şi gena.... ele reprezintă unităţi ireductibile, piese de construcţie elementare ale unui întreg mai mare: atomul - fundament al materiei; bit-ul - fundament al informaţiei digitale; gena - fundament al eredităţii şi informaţiei biologice*”. Precizează totodată că ”*....e imposibil să înţelegem evoluţia sau biologia celulelor şi a organismelor - ori patologia, comportamentul, temperamentul, boala, rasa şi identitatea umană - fără să descifrăm, mai întâi, conceptul de genă*”. Cartea este dedicată de Mukherjee bunicii sale, care ”*a îndurat cu stoicism loviturile istoriei*” vremii în India, dar a şi trăit o mare dramă personală determinată de ”*moştenirea genetică dăruită urmaşilor*”, soldată cu unele boli psihice.

Autorul îşi începe incursiunea în istoria geneticii, cum era de aşteptat de altfel, cu primul şi cel mai genial dintre slujitorii acesteia, în opinia mea (ţinând cont de stadiul cunoaşterii în biologie la vremea aceea) - Johann Gregor Mendel, modestul călugăr din Brno, al cărui mod de interpretare a unor fapte experimentale fascinează şi astăzi, şi care l-au condus la intuirea existenţei în organismele vii a unor factori responsabili cu transmiterea în descendenţă a caracterelor. Părea atât de ermetică demonstraţia lui Mendel pentru unii dintre hibridologii vremii care i-au cunoscut rezultatele şi concluziile încât au fost neglijate complet timp de mai bine de trei decenii. Unora dintre ei le-a fost chiar foarte greu să-i înţeleagă şi accepte opera. În acest sens, este grăitor următorul pasaj din cartea lui Mukherjee: ”*A fost nevoie de douăzeci de ani de eforturi extenuante pentru ca Hugo de Vries să devină un adept al ideilor despre ereditate ale lui Mendel*. *Pentru William Bateson, biolog englez, această convertire a avut loc în doar o oră - timpul petrecut într-un tren în viteză, între Cambridge şi Londra, în mai 1900*”. M-am întrebat adesea, cum ar fi procedat Darwin dacă ar fi cunoscut lucrarea lui Mendel, ce atitudine ar fi avut, ar fi înţeles şi folosit principiile eredităţii formulate de acesta în interpretarea propriilor observaţii şi principii din ”*Originea speciilor*”?!

După prezentarea începuturilor geneticii, dr. Mukherjee intră pas cu pas în toate ungherele geneticii, atacându-le cu o uşurinţă, siguranţă şi privire critică de invidiat. Mai nimic din ceea este esenţial de ştiut de către cei interesaţi în acest domeniu nu i-a scăpat autorului: redescoperirea legilor mendeliene şi definirea genelor ca particule ale eredităţii; localizarea pe cromozomi a genelor; descoperirea ADN-ului ca substanţă a eredităţii, a codului genetic, a maşinăriei celulare de sinteză a proteinelor şi reglării genelor; sinteza artificială a genelor şi proteinelor; descoperirea tehnologiei ADN-recombinant şi a ingineriei genetice; secvenţierea genomului unor organisme (inclusiv al celui uman); evidenţierea rolului epigeneticii în determinarea unui fenotip; elemente de genetică a dezvoltării, şi a evoluţiei la om; genetica unor boli umane (între care cancerul şi bolile mintale); dar şi subiecte mai delicate cum sunt

destabilizing scientific ideas, which divided it into three unequal periods: the atom, the bit and the gene… they represent irreducible units, elementary building blocks of the larger whole: the atom - the foundation of matter; the bit - the foundation of digital information; the gene - the basis of heredity and biological information”. He also states that *“... it is impossible to understand the evolution or biology of cells and organisms - or pathology, behaviour, temperament, disease, race and human identity - without first deciphering the concept of gene*”. The book is dedicated by Mukherjee to his grandmother, who “*stoically endured the blows of history*” of the time in India, but also lived a great personal drama determined by the “*genetic inheritance given to the descendants*”, resulting in some mental illness.

The author begins his journey into the history of genetics, as might be expected, with the first and most brilliant of his servants, in my opinion (taking into account the state of knowledge in biology at that time) - Johann Gregor Mendel, the modest monk from Brno, whose way of interpreting some experimental facts fascinates even today, and led to the intuition of the existence in living organisms of factors responsible for the lineage of the characters. Mendel's demonstration seemed so hermetic to some of the hybridists of the time who knew his results and conclusions that they had been completely neglected for more than three decades. Some of them found it very difficult to understand and accept the work. In this regard, the following passage from Mukherjee's book is encouraging: “*It took twenty years of strenuous efforts for Hugo de Vries to become a follower of Mendel's ideas of heredity. For William Bateson, an English biologist, this conversion took place in just one hour – the time spent on a speed train between Cambridge and London in May 1900*.” I have often wondered what Darwin would have done if he had known Mendel's work, what attitude he would have had, understood and used the principles of heredity formulated in interpreting his own observations and principles from the “*Origin of Species*” ?!

After the presentation of the beginnings of genetics, Dr. Mukherjee gradually explores all the “meanders” of genetics, attacking them with ease, certainty and enviable criticism. Nothing of what is essential to know by those interested in this field has escaped the author: the rediscovery of Mendelian laws and the definition of genes as particles of heredity; the localisation of genes on chromosomes; the discovery of DNA as a substance of heredity, of the genetic code, cellular machinery for protein synthesis and gene regulation; the artificial synthesis of genes and proteins; the discovery of recombinant DNA technology and genetic engineering; the genome sequencing of some organisms (including the human ones); the emphasis of the role of epigenetics in determining a phenotype; the genetic elements of development and evolution in humans; the genetics of some human diseases (including cancer and mental illness); but also more delicate topics such as the genetics of intelligence, sexuality, human

genetica inteligenței, a sexualității, a identității umane, care este stadiul terapiei genice la om etc. Unele din aceste ”povestiri” sunt însă extrem de dureroase și ele avertizează asupra a ceea ce poate înseamna înțelegerea greșită și folosirea necugetată a unor descoperiri de geniu ale omenirii. Principiul ”supraviețuirii celui mai apt” prin selecție naturală formulat de Darwin și legitățile eredității stabilite de Mendel au dat ”idei” unor minți înfierbântate, care au găsit de cuviință că specia umană trebuie îmbunătățită, că trebuie creat omul superior, că e momentul de a înlătura din populațiile umane unele tulburări fizice și psihice și evident și pe purtătorii lor, prin selecție artificială. Unul din promotorii acestui curent și autorul termenului de *eugenie* a fost Francis Galton, mare admirator al operei lui Darwin și văr al acestuia. S-a stârnit o adevărată isterie în primele decenii ale secolului trecut în SUA și o campanie furibundă pentru sterilizarea forțată a celor ”*neadecvați*”, căreia i-au căzut victime un număr mare de persoane cu diverse deficiențe fizice sau mentale. Cum foarte bine subliniază dr. Mukherjee, factorii ereditari ai lui Mendel (genele) se transformaseră ”*dintr-un concept abstract în cadrul unui experiment botanic, într-un puternic instrument de control social*”. Acest curent aberant de ”*purificare genetică*” avea să cuprindă și Europa ”*ca o molimă violentă*” și în ”*cea mai puternică și mai macabră formă posibilă*” în Germania nazistă (prin *Rassenhygiene* -”*igiena rasială*”). ”*Niciodată altcândva în istorie și niciodată cu o asemenea subtilitate genele nu mai fuseseră atât de ușor confundate cu identitatea, identitatea cu deficiența și deficiența cu exterminarea”*.

Scenariul avea să se repete, la o scară mai mică e drept, spre sfârșitul aceluiași frământat secol 20. Progresul înregistrat de tehnicile de depistare a sexului și a unor boli genetice în stadiul embrionar și posibilitatea de intervenție directă asupra genelor au dus la unele excese, în sensul selecției viitorului copil funcție de sex, sau eliminării unor caractere nedorite la om prin terapie genică. Eșecul răsunător al unor experiențe de corectare a genelor a determinat stoparea lor. Nu a sosit încă momentul, nu s-au ”copt” condițiile unor astfel de operațiuni. Iată opinia autorului: ”*Fiecare boală ”genetică” este o nepotrivire între genomul organismului și mediul acestuia*”. Interesant, nu?! Și continuă: ”*Este o iluzie modernă tipică să ne imaginăm că soluția definitivă pentru o anumită boală constă în schimbarea naturii - adică a genelor - în condițiile în care mediul este adesea mult mai maleabil*”. Iar în alt paragraf arată: ”*Câtă vreme abilitatea de a prezice fenomurile umane pe baza genomurilor umane este limitată de lipsa de mijloace tehnologice, capacitatea de a modifica intenționat genomurile umane a fost limitată de penuria de tehnologii biologice*”. Să privim oare cele de mai sus ca o notă pesimistă a autorului în privința terapiei genice la om?! Da și nu. Mai degrabă e vorba de un apel la prudență. Va veni și ziua când vor fi întrunite condițiile unor intervenții sigure pe om la nivelul unor gene ”bolnave” în vederea corectării lor, dar și de adecvare a ”mediului” pentru manifestarea lor. Până atunci însă, nimeni nu trebuie să se

identity, which is the stage of gene therapy in humans, etc. Some of these “stories” are extremely painful, however, and they warn of what the misunderstanding and reckless use of some genius discoveries of humanity may mean. The principle of “survival of the fittest” through natural selection formulated by Darwin and the laws of heredity established by Mendel gave “ideas” to heated minds, who found it appropriate that the human species should be improved, that the superior man should be created, that it was time to remove from the human populations some physical and mental disorders and, obviously, their carriers, by artificial selection. One of the promoters of this trend and the author of the term “eugenics” was Francis Galton, a great admirer of Darwin's work and his cousin.

There was a real hysteria in the first decades of the past century in the USA and a fierce campaign for the forced sterilisation of the “inadequate”, which affected many people with various physical or mental deficiencies. As Dr. Mukherjee points out very well, Mendel's hereditary factors (genes) were transformed “*from an abstract concept of a botanical experiment, into a powerful instrument of social control.*” This aberrant trend of “*genetic purification*” would also expand in Europe “*as a violent plague*” and in “*the strongest and most macabre form possible*” in Nazi Germany (through *Rassenhygiene* - “racial hygiene”). “*Never before in history and never with such subtlety have genes been so easily confused with identity, identity with deficiency and deficiency with extermination*.”

This scenario was to be replicated, on a more reduced scale, towards the end of the same troubled 20th century. The progress registered in techniques of identification of sex and genetic diseases in embryo stage and the possibility of direct intervention on genes has led to extremes such as the selection of the future child based on sex, or the elimination of unwanted characteristics in humans through gene therapy. The huge failure of some gene correction experiments led to their termination. The time has not arrived yet, the conditions for such operations have not been ensured. Here is the author's opinion: “*Each ‘genetic’ disease is a mismatch between the genome of the organism and its environment*”. Interesting, right?! He continues: “*It is a typical modern illusion to imagine that the definitive solution for a particular disease is to change nature – that is, genes - under the conditions in which the environment is often much more malleable*”. And in another paragraph, he states: “*While the ability to predict human phenomena based on human genomes is limited by the lack of technological means, the ability to intentionally modify human genomes has been limited by the scarcity of biological technologies*”. Should we look at the above as a pessimistic note from the author regarding gene therapy in humans? Yes and no. It is much rather a call to caution. The day will come when the conditions of safe interventions on the human at the level of some “sick” genes are met in order to correct them, but also to adapt the “environment” for their manifestation. Until then, no

teamă pentru viața lui dacă este nefericitul purtător al unei boli de natură genetică.

Mi s-a părut ingenioasă strategia folosită de dr. Mukherjee pentru a face cartea atractivă. Fiecare subiect abordat, fiecare nouă cucerire a geneticii, este îmbrăcată într-o poveste, adevărată sau fictivă, ce-i vizează pe autorii ei, contextul economic, politic și social în care s-a realizat descoperirea, stadiul cunoașterii în momentul respectiv, competiția febrilă dintre unele echipe de cercetare de a elucida anumite secrete ale geneticii. Edificatoare, sub acest ultim aspect, mi s-au părut istorisirile privitoare la competiția pentru descifrarea structurii DNA, pentru secvențierea genomului uman, pentru descoperirea și utilizarea tehnologiei DNA-recombinant în operațiile de inginerie genetică etc. Unele istorisiri ale autorului te fac te simți ca pe un câmp de luptă, unde combatanții sunt oamenii de știință, care să învingă primul.

Prezentarea devine și mai atractivă datorită folosirii unor fraze, expresii, comparații, metafore, figuri de stil la care nu te aștepți într-o carte științifică. Nu ai cum să nu admiri talentul, nu poți rămâne indiferent la informații și afirmații de genul: genele sunt ”*pixeli ai eredității*”; ”*fenotipul trage după el genotipul la fel cum un cal trage o căruță*”; ”*știința este un sport de anduranță*”; ”*temperamentul de-a dreptul radioactiv al lui Franklin*”; ”*Mendel ar putea fi considerat cel mai vechi „anatomist„ al genei*”; ”*ar fi fost nevoie să extragă gena nativă din celulele umane, ca și cum ar fi scos o râmă din pământ*”; ”*... cele două molecule* (este vorba despre DNA și RNA, n.n.) *s-au întâlnit, s-au îndrăgostit și au pus bazele unei vieți conjugale de durată*”; ”*proteinele sunt acele noduri de rețea din lumea biologică*”; ”*... factorii de transcripție - ”dirijorii” simfoniei genelor în celule...*”; ”*... genele care permit unei celule să învingă îmbătrânirea și moartea îi pot schimba destinul către o creștere perpetuă și o nemurire malignă ...*”; ”*... cromozomul Y este brăzdat de toate cicatricile evoluției*”... ”*el este în mare măsură o victimă a unei uzuri planificate*”; ”*sexul a fost inventat .... pentru a permire recombinarea*”; unii viruși sunt *”transportori genetici „profesioniști”*; ”*neanderthalienii au fost vecinii și rivalii noștri ... I-am iubit - dar, da, i-am ucis*”; genomul propriu ”*este ca și când am purta permanent în portofel o fotografie a fiecăruia din strămoșii noștri*”; ”*genomul este o stradă cu sens unic*”; ”*genomul mitocondrial - un metronom genetic ideal*”; ”*singurul imbold* (al evoluției, n.n.) *este supraviețuirea și selecția, singura ei memorie este mutația*”; ”*până la sfârșitul anilor ’50, epigenetica a fost mai mult fantezie decât realitate*”; despre șoarecii modificați genetic, cu memorie mai bună - ”*ei au devenit savanții lumii rozătoarelor*”; în legătură cu eșecul unor experiențe de terapie genică la om ”*... o teorie superbă poate fi ucisă de un experiment urât*” etc.

Curios să văd ce au mai scris alții între timp despre cartea ”*The gene: An Intimate History*”, am constatat că nu lipsesc unele critici ce i se aduc. Unii consideră că unele informații științifice prezentate nu ar fi tocmai exacte, că a omis câteva nume importante care au

one should fear for his life if he is the unfortunate carrier of a genetic disease.

The strategy used by Dr. Mukherjee to make the book attractive seems really ingenious to me. Each subject addressed, each breakthrough of genetics is wrapped up in a story, true or fictional, which concerns its authors, the economic, political and social contexts in which the discovery was made, the stage of knowledge at that moment, the feverish competition between some research teams to elucidate certain secrets of genetics. Revealing in this respect were the stories regarding the competition for the deciphering of the DNA structure, for the sequencing of the human genome, for the discovery and use of the DNA-recombinant technology in the operations of genetic engineering, etc. Some of the author’s stories make you feel like being on a battlefield, where the fighters are scientists who struggle to be the first to win.

The presentation becomes even more attractive due to the use of phrases, expressions, similes, metaphors and other rhetorical figures that you do not expect in a scientific book. You cannot help admiring talent, you cannot remain indifferent to information and statements like this: genes are “*pixels of heredity*”; “*the phenotype pulls the genotype after it as a horse pulls a waggon*”; “*Science is an endurance sport*”; “*Franklin's utterly radioactive temperament*”; *Mendel could be considered the oldest “anatomist” of the gene*; “*it would have been necessary to extract the native gene from human cells, as if it pulling a worm out of a ground hole*”; “*... the two molecules* (ie DNA and RNA, n. n.) *met, fell in love and laid the foundation for a long-lasting marital life*”; “*Proteins are those network nodes in the biological world*”; “*transcription factors – “directors” of gene symphony in cells ...*”; “*... genes that allow a cell to overcome aging and death can change destiny toward perpetual growth and malignant immortality ...*”; “*... the Y chromosome is scarred by all the scars of evolution*” ... “*he is largely a victim of planned use*”; “*sex was invented ... to allow recombination*”; some viruses are “*professional” genetic carriers*”; “*the Neanderthals were our neighbours and rivals ... I loved them - but, yes, I killed them*”; our own genome “*is as if we were permanently carrying in the wallet a photograph of each of our ancestors*”; “*the genome is a one-way street*”; “*the mitochondrial genome - an ideal genetic metronome*”; “*the only impulse* (of evolution, n. n.) *is survival and selection, its only memory is mutation*”; “*until the late 1950s, epigenetics was more fantasy than reality*”; about genetically modified mice with better memory - “*they became the scientists of the rodent world*”; referring to the failure of some gene therapy experiments in humans “*... a magnificent theory can be killed by an awful experiment*”.

Curious to see what others have written about the book “*The Gene: An Intimate History*”, I have found that there is some criticism to it. Some believe that part of the scientific information presented is not accurate, that it omitted some important names that contributed to the

contribuit la progresul geneticii, că unele comentarii sunt prea speculative, că nu a relevat realizările obținute în biotehnologie și agricultură prin aplicarea tehnicilor ingineriei genetice, că nu s-a referit la organismele modificate genetic, etc. Evident că într-o lucrare atât de amplă, asupra unui domeniu care a ținut prima pagină de-a lungul întregului secol al XX-lea, s-au putut strecura și mici inexactități, neesențiale. Cine însă, în afara autorului, poate hotărâ asupra conținutului unei cărți?! Cartea nu este un tratat de genetică, menit să epuizeze toate aspectele domeniului, ci mai degrabă una care vrea să ne lumineze în privința potențialului geneticii, un soi de popularizare de nivel ridicat. Ea reprezintă tălmăcirea pentru o masă mai mare de oameni (decât anterior apariției sale) a cuceririlor geneticii, a impactului acestor descoperiri asupra vieții noastre de zi cu zi, asupra cunoașterii în general și a progresului exercitat de genetică asupra unor domenii conexe. Consider că prin această carte Siddhartha Mukherjee a făcut un mare serviciu geneticii, a făcut-o asimilabilă, a eliberat-o din chingile unui limbaj arid, complicat, pentru mulți suficient de abstract, făcând din ea un bun comun, pus la dispoziția oricui dorește să-i cunoască potențialul și să-i aprecieze impactul. Cartea este și un frumos omagiu adus tuturor truditorilor pe altarul acestei științe. Felicitări și doamnei Carmen Nedelcu, traducătorul ei, care a reușit să păstreze și în grai românesc frumusețea scriiturii autorului. E o carte care nu ar trebui să lipsească din biblioteca noastră și în primul rând a biologilor, medicilor și agronomilor. Am simțit o mare plăcere, bucurie și satisfacție când am citit-o și împărtășesc întru-totul opinia exprimată de Harriet Hall, într-o recenzie din 2016 asupra cărții: "*Mukherjee is a rare combination of scientist, storyteller, and educator*".

De ce ar trebui să citim cartea "*Gena: o istorie fascinantă*", de Siddhartha Mukherjee?!

Pentru că îți arată ce frumoasă și rodnică e competiția în cercetare și ce înseamnă perseverența în atingerea unui obiectiv, pentru că îți dă o perspectivă asupra potențialului uman imens în descifrarea secretelor celor mai ascunse ale vieții, pentru că îți oferă o educație de bază în genetică, te introduce într-un domeniu fascinant al științei unde încerci senzația că totul e posibil, pentru că îți explică de ce suntem atât de asemănători și totuși atât de diferiți între noi, pentru că te face să înțelegi ce rol au mutațiile în patologia umană și îți dă certitudinea că momentul când se va pune capăt unor boli "crude" ce ne macină sănătatea de secole și milenii - se apropie, dar și pentru frumusețea tulburătoare a scriiturii cărții. Așa că, vă invit pe toți cei ce citiți aceste rânduri, să vi-o procurați și să vă faceți propria impresie despre conținutul și calitatea ei.

progress of genetics, that some comments are too speculative, that it did not reveal the achievements obtained in biotechnology and agriculture by applying the techniques of genetic engineering, that did not refer to genetically modified organisms, etc. Obviously, in such a large work, on a domain that kept the front page throughout the entire 20th century, small inaccuracies, but non-essential ones, were inevitable. But who, besides the author, can decide on the content of a book? The book is not a treatise on genetics, meant to cover all aspects of the field, but rather one that wants to bring to attention the potential of genetics, a kind of high-level popularisation. It represents the decoding for a greater mass of people of genetic breakthroughs, the impact of these discoveries on our daily lives, on knowledge, in general, and on the progress made by genetics in related fields. I think that, through this book, Siddhartha Mukherjee has done a great service to genetics, made it assimilable, released it from the straps of arid, complicated language, for many rather abstract, making it a common ground, available to anyone who wants to know its potential and appreciate its impact. The book is also a beautiful tribute to all the scholars on the altar of this science. Congratulations to Carmen Nedelcu, its translator, who managed to render the beauty of the author's writing into Romanian. It is a book that should not be missing from our book case and, first of all, from the one of biologists, doctors and agronomists. I felt great pleasure, joy and satisfaction when I read it and I completely share the opinion expressed by Harriet Hall, in a 2016 review of the book: "*Mukherjee is a rare combination of scientist, storyteller, and educator*".

Why should one read the book "*The Gene: an Intimate History*" by Siddhartha Mukherjee ?!

Because it shows us how beautiful and fruitful the competition in research is and what it means to persevere in reaching a goal, because it gives us a perspective on the immense human potential in deciphering the most hidden secrets of life, because it provides us with basic education in genetics, it introduces us to a fascinating field of science where we may feel that anything is possible, because it explains why we are so similar and yet so different from each other, because it makes us understand what role mutations play in human pathology and it gives us the certainty that the moment when some "cruel" diseases that have spoiled our health for centuries and millennia will be cured – is drawing near; not to mention the disturbing beauty of the book's writing. Therefore, I invite all of you who read these lines, to purchase it and form your own opinion about its content and quality.

Professor PhD, Gogu Ghiorghita
Academy of Romanian Scientists

CANDIDIASIS IN PREGNANCY- PERSONAL STUDY

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Abstract. The impact of an intensive educational program regarding candidiasis in pregnancyon health professionals knowledge at Clinical Hospital of Obstetrics and Gynecology ”Elena Doamna” in Iași, Romania. The study was designed in three phases: Assessment phase, Implementation phase and Evaluation phase. The study was conducted from early January to the end of December 2019. The result of the study shows that its most frequent location is in the mouth and the vagina. The symptoms are reduced and the diagnosis is based on the clinical examination, the confirmation being performed by microscopic examination. Prophylactic treatment of candidiasis involves maintaining a rigorous hygiene, avoiding excessive and unprotected use of antibiotics and increasing the body's immunity through a balanced diet and through the intake of mineral salts and vitamins.

INTRODUCTION

Candidiasis is a fungal infection that develops in conditions of appropriate temperature, moisture and environment and it can be located in the mucosa, especially in the mouth and vagina, but also in some other internal organs like the esophagus and the intestine.Its proliferation occurs when this balance is broken because of an uncontrolled consumption of antibiotics and also in case of decreased immunity (9).

After birth you can also locate it in breasts - areola and lactiferous ducts– but there is no causal link between the mother's candidiasis and that of the newborn. Symptoms consist of an appearance of white spots on the oral mucosa (muguet) with an underlying congestive background, painful itch, sometimes feeling like a burning in the breast or in the pharynx or esophagus, depending on location, or difficulty swallowing (2). In oral form, the dentist must differentiate it from other oral lesions with carcinogenic potential (leukoplakia, erythroplakia).The definitive diagnosis is made after scraping and cultivation on the Sabouraud agar, by visualizing the micelles under the microscope (5). Prophylactic therapy refers to the introduction of measures designed to control its excessive development and increase the body's immunity– rigorous oral hygiene, avoid excessive use of antibiotics and proper nutrition. Curative therapy can be performed in two ways:

- local topics – creams, shampoos, mouth water, gentian violet,
- general systemic therapy with various antifungal agents – Ketoconazole, Fluconazole, administered by mouth or parenterally. Ketoconazole and especially Fluconazole are very active on *Candida albicans*, but they also have side effects that, even if minor, should be avoided in pregnant women. They are mainly administered post-partum.

Of the fungal infections that are of interest to the pregnant woman, the most common is candidiasis, which may affect the oral cavity (muguet) (fig.1A**)**, but also the vagina, skin, nipple, galactophore channels (lactiferous ducts). In some cases, internal organs such as the esophagus and intestine may be affected by this disease. Candidiasis is produced by a fungus called *Candida albicans* and more rarely by other strains (*Candida glabratis, Candida drusei* or *Candida tropicalis*). This fungus is found in healthy organisms, being part of the bacterial and fungal flora that lives in symbiosis with other microorganisms (5).

Fig.1. A. Extensive muguet, **B**. Glossy candidosis, **C.**Candida soft palate and glottis (personal collection)

The highest density of fungi develops in the oral cavity and intestines, but the saprophytic microbial flora stops their proliferation. There are certain risk factors in its occurrence and development, such as: hormonal changes during pregnancy, dehydration, diabetes, overuse of oral contraceptives, overuse of antibiotics and corticosteroids or allergic conditions (7, 10). At the buccal level the candidiasis looks like whitish spots located in the lingual, palatal, gingival areas (fig. 1 B,C) which after scraping leaves the place of a rosy and painful placard.
Sometimes they are asymptomatic, but most often they cause pain and modify taste. Oral candidiasis is considered an early sign of an alteration of the immune system, and those who present more than 200 CD4 + cells and who also have muguet must undergo preventive treatment against PPC (pneumonia with *Pneumocistis carini*). Esophageal candidiasis can cause difficulty swallowing, sore throat and sometimes pain and heartburn (10).

PURPOSE AND OBJECTIVES

Through this original publication, we tried to highlight the exaggerated mode of action of the *Candida albicans* fungus on the oral cavity to the pregnant woman, in the context of existing hormonal changes in pregnancy.

The study was conducted on a large group of pregnant women and postpartum period, on 499 women, precisely to highlight these exaggerated changes produced by *Candida albicans* fungus on the oral cavity.

A complex of factors were considered (age, place of origin, educational level, parity, clinical symptomatology, various pathologies associated with pregnancy, oral hygiene, nutrition, access to the dentist, administred treatment).

MATERIAL AND METHOD

Clinical examination usually places the diagnosis, but the dentist with the obstetrician must make the differential diagnosis with other oral lesions that are potentially carcinogenic (leukoplakia, erythroplasia, lichen planus). In the latter cases, the lesion does not disappear during scraping, and on microscopic examination (fig.2) after trichromic staining, the mycelial filaments do not appear.

Diagnostic tests are represented by exfoliative cytology, isolation by growing fungi on Sabouraud medium, the use of potassium hydroxide, trichromic fixation and staining and observation under a microscope. Sometimes biopsy is required for differential diagnosis (5).

The Sabouraud medium is used for isolation and cultivation of fungi (yeasts, molds and dermatophytes) from clinical trials (fig 2). Peptones from the Sabouraud environment are a source of factors supporting nitrogen growth (1). Glucose provides an energy source for the growth of microorganisms. The high glucose concentration provides an advantage for the growth of fungi (osmotically stable), while most bacteria do not tolerate high sugar. In addition, the low pH value is optimal for fungi.(1)

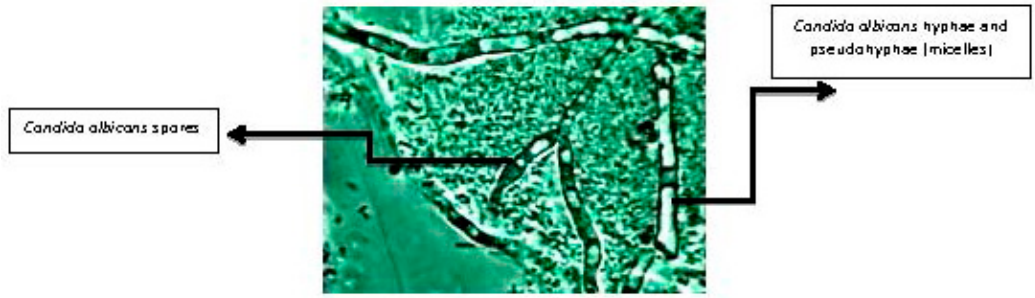


Fig. 2. Microscopic examination- Candida albicans- pharyngeal exudate, smear, growth on Sabouraud medium, magnification 200X (personal collection)

Candida albicans can be located in pregnancy or in the confinement after birthin the mammary areola and the milk ducts. Micelles need heat, moisture and darkness for development. They colonize 90% of newborns in the first hours after birth, but there is no cause-effect relationship between breast and newborn candidiasis.The cutaneous-mucosal form occurs more frequently when the skin or mucosal integrity is affected. *Candida albicans* would be harmless if there were no cracks in the mammary areola. Proper positioning of the newborn at the breast is important in the development of breast candidiasis (8).

Consultation with a nutritionist is useful for providing enough protein, carbohydrates, fats, minerals and vitamins, which are useful both for maternal health and fetal development. Unsweetened yogurt with active bacterial cultures - acidophilic lactobacillus - is a known remedy against yeast infection (4).

Curative therapy can be divided into two groups:

a) Topical treatments: creams, shampoos, mouthwash, gentian violet, which come in direct contact with the mucosa and skin. It is a cheap therapy with no side effects.
b) General systemic therapy by which drugs in various forms circulate in the body and which should usually be avoided during pregnancy due to side effects. They can be administered post-partum.

Topical treatment of oral candidiasis in pregnancy includes rinsing the mouth with nystatin solutions, amphotericin B or flavonoid alcohol solution extracted from plants.

Lingual or gum swabs can also be performed with boro-glycerine, the dose and duration depending on the location and severity of the infection. A modern treatment used in candidiasis for pregnant women is Lapachol (fig. 3) an extract from subtropical plants with strong anti-fungal properties. It is used as an infusion with which you have to rinse the mouth 2-3 times a day for 14 days. Per capita consumption of pharmaceuticals during pregnancy should be avoided (6).

Fig. 3. Lapachol plant (personal collection)

Another inexpensive and handy remedy is the use of acidophilic lactobacillus, a beneficial bacterium found in the vaginal and intestinal flora, maintaining the balance of bacterial flora. It is effective for restoring intestinal flora after antibiotic therapy in particular and promotes healing mouth sores, herpes and muguet's. It is found in dairy products - yogurt,

kefir, buttermilk, but it can also be found in pharmacies as capsules or tablets, their use being indicated after oral antibiotics. Side effects are minor (bloating), and contraindication is lactose intolerance (4).

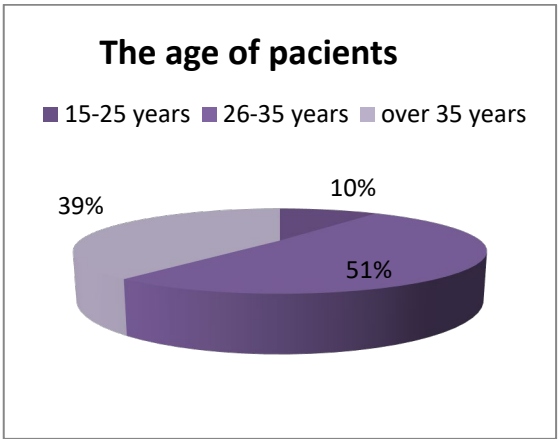
The treatment of post-partum mammary candidiasis is especially topical through the gentian violet bathing, which has immediate action and has no side effects. If the symptoms recur, the diagnosis of candidiasis is confirmed and can be continued with targeted antifungal therapy (Ketoconazole, Fluconazole).

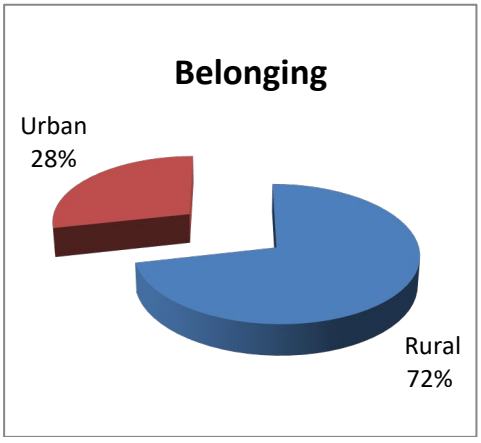
Fluconazole is an orally or parenterally administered systemic antifungal that stops candida multiplication without destroying it, which implies a long-term treatment to prevent relapses. It is well tolerated, but it also has digestive side effects (nausea, abdominal pain, diarrhea, skin rash). As it passes into milk, it is also effective in treating candidiasis of milk ducts (8).

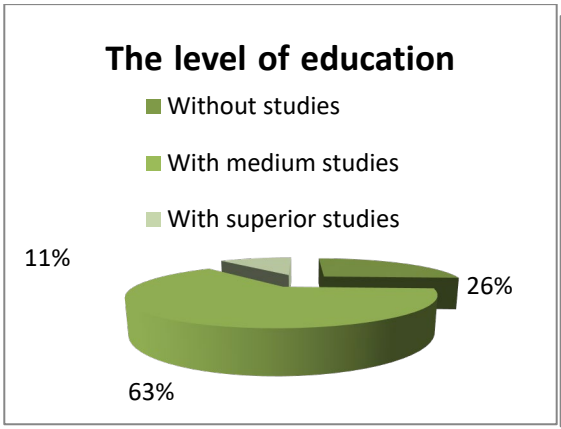
It has no side effects on the newborn, so the mother treated with this product can breastfeed without risk. The dosage is 200 mg for the first time, then 100 mg twice a day for 14 days. In order to avoid relapses, treatment should be continued for 7more days after symptom remission. It is good to treat the newborn as well, in which case the dose is 6 mg kg body / day, followed by 3 mg/kg body/day for 14 days or for the whole time of the maternal therapy (11).

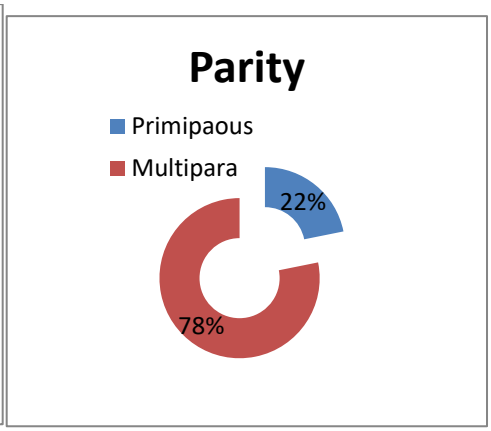
Personal study

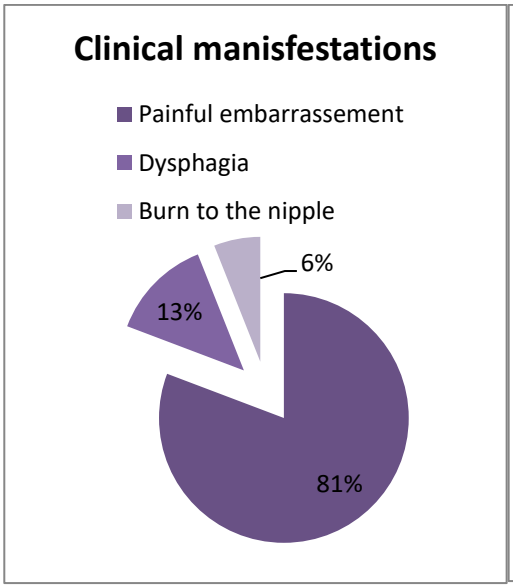
The study was made over a period of 1 year (2019), at the Obstetrics and Gynecology Hospital "Elena Doamna", Iasi, to provide a better view on the incidence and influence of candidosis in pregnant women (375 patients) and women who gave birth (124 patients). These were divided according to the following factors: the age, belonging, educational level, parity, clinical manifestations, pathology associated with pregnancy, level of oral hygiene, consumption of dairy products, dispensary to the dentist, local treatment administered.

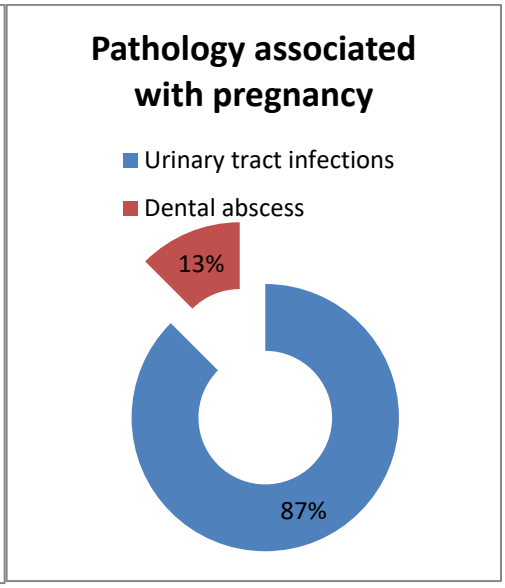


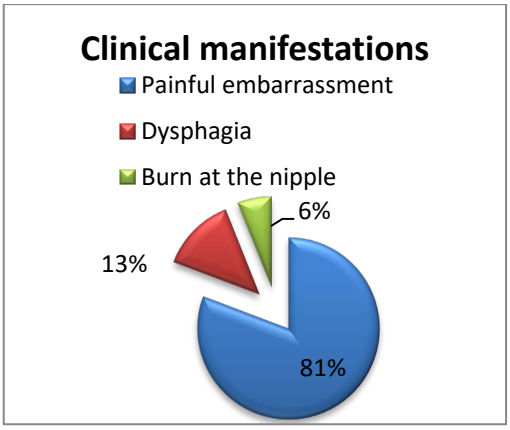


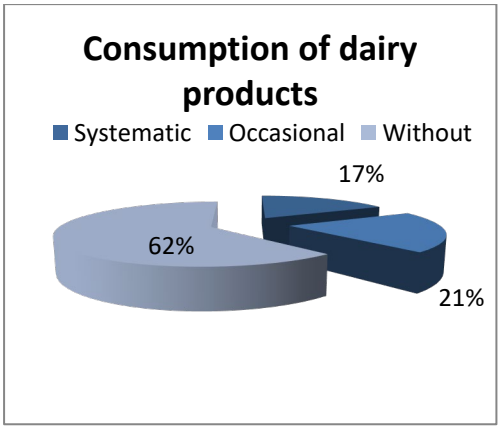

The level of education
Without studies
With medium studies
With superior studies
11%
26%
63%

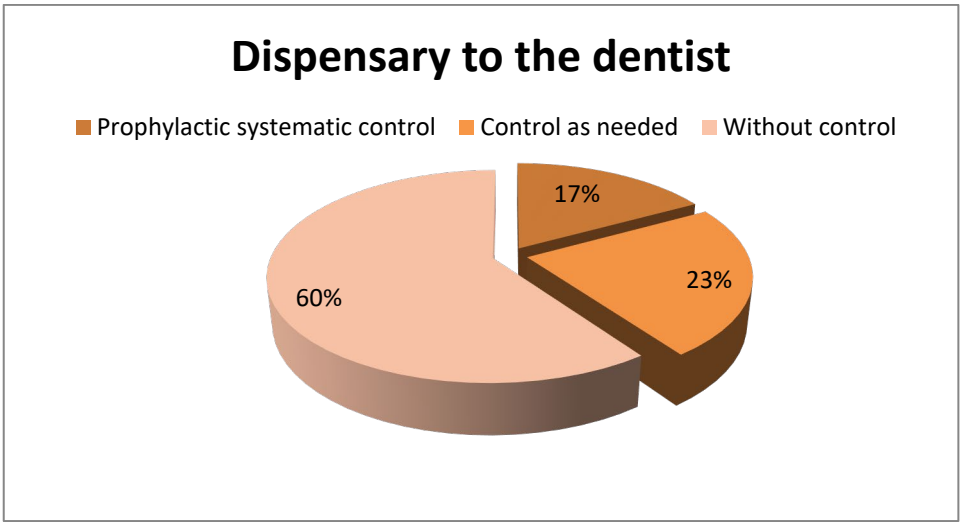

Parity
Primipaous
Multipara
22%
78%

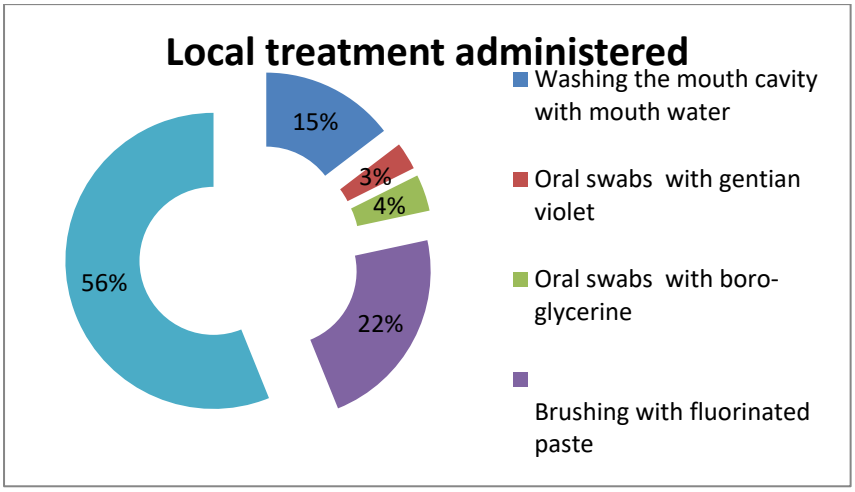

Clinical manisfestations
Painful embarrassement
Dysphagia
Burn to the nipple
6%
13%
81%


Pathology associated with pregnancy
Urinary tract infections
Dental abscess
13%
87%


Clinical manifestations
Painful embarrassment
Dysphagia
Burn at the nipple
6%
13%
81%


Consumption of dairy products
Systematic
Occasional
Without
17%
62%
21%


Dispensary to the dentist
Prophylactic systematic control
Control as needed
Without control
17%
23%
60%



DISCUSSIONS

From the personal study which was carried out on the 499 pregnant women and postpartum period in which the fungus *Candida albicans* manifested itself in the oral cavity we note:
- the increased number of patients aged between 26-35 years, mostly from the rural area, with medium education, multi-pair (multiple births) and low hygiene.
- the most common clinical manifestation in the studied group is represented by the painful embarrassment that appeared at the oral cavity level.
- from the 499 patients studied, a total of 120 patients had pregnancy-related pathology, of which 105 patients (87%) were diagnosed with urinary tract infection, and 15 patients (13%) with dental pathology (dental abscess), the 120 patients requiring antibiotic therapy, exacerbating element for the development of oral candidosis.
- the most patients did not consume dairy products during pregnancy (lactobacil acidophil), the dispensary to the dentist did not exist, as a result they did not receive specialized treatment.

CONCLUSIONS

Candidiasis is a fungal infection caused by a fungus called *Candida Albicans* with different location - mucous membranes, skin, and internal organs.

The causal agent lives in the human body as saprophyte, in balance with other bacteria and exacerbates its activity in case of breaking this balance by hormonal changes, excessive use of oral antibioticsand corticosteroids, as in the case of conditions that reduce the body's immunity, such as diabetes, allergic conditions.

The pathogen exacerbates its development and virulence under favorable conditions of humidity, heat, darkness and by decreasing the immunity of the host organism.

Its most frequent location is in the mouth and the vagina. The symptoms are reduced and the diagnosis is based on the clinical examination, the confirmation being performed by microscopic examination.

Prophylactic treatment involves maintaining a rigorous hygiene, avoiding excessive and unprotected use of antibiotics and increasing the body's immunity through a balanced diet and through the intake of mineral salts and vitamins.

The curative treatment can be local, using creams, shampoos, mouth water, gentian violet, boro-glycerin, or general, using oral or parenteral Lapachol, Ketoconazole and more recently Fluconazole. The latter are not given to pregnant women because of the side effects.

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RELATIONSHIP BETWEEN PATTERN OF FINGERPRINTS AND OBESITY

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Keywords: fingerprints, obesity, hands, loops, arches and whorls

Abstract: The goal was to research the pattern of fingerprints in all the fingers of both hands and to study the association between obesity and fingerprint among university students in different faculties of Koya University with statistical analysis. Dactylography or the fingerprint system relies on the study of stratum ridges and their configurations [dermatoglyphic (derma = skin+ glyph = carving)] in the fingers, palms, and soles. Estimates that probabilities are about one in sixty-four thousand million for two individuals with similar finger impressions. Arbitrate heredity and environment in combination affect the pattern of ridges. We have conducted a study with 120 individual (30 males and 30 females normal and obesity) having the different weight of (normal and obesity), this study was carried out in different faculties in Koya University. All the 10 fingerprint patterns were divided into loop, whorl, and arch. The fingerprint was taken with the help of a stamp pad imprinting the fingerprint ridges over A4 size white paper.
The general distribution of the pattern of fingerprint showed high frequency (58.41%) of the loop, whereas whorls were moderate (37.83%) and arches were least (3.75%) in frequency. Loops are dominated in both normal and obesity for both individual males and females. The study suggests an association between fingerprint pattern and obesity (whorls in left hand of male and female, and arches in different finger of right and left hand of male, also whorls in different finger of right and left hand of female, and arches in different finger of right hand of female) but there is no association between fingerprint pattern and obesity in (loops, whorls, arches, among subject normal and obesity male right hand, loops, and arches among subject normal and obesity of male in left hand, also there is no association between loops, whorls, arches among subject normal and obesity of female right hand, and loops and arches among subjects normal and obesity of female in left hand, also loops and whorls in different finger of right and left hand of male, then loops in different finger of right hand of female, and also loops and arches in different finger of left hand of female) based on statistical analysis of chi-square test when results combined between both genders.

INTRODUCTION

Obesity is a disorder characterized by the extra adiposity tissue, which is a major supply of morbidity and mortality due to a variety of complications linked to weight (Smail 2019). The biological basis of this problem has been explored from evolutionary and mechanistic perspectives (Lizar 2005). The conventional clinical cut-offs for diagnosis involve body mass index calculation (BMI; body weight in kg/height in m). A BMI of 25–29.9 kg/m is considered overweight, 30–34.9 kg/m is obese, and ≥35 kg/m is morbid obesity (Wijnhoven *et al.,* 2015).
There are more than 430 chromosomic regions with gene variants involved in body weight regulation and obesity development (Ochoa *et al.,* 2004). Peroxisome proliferator-activated receptor gamma and, potentially, INSIG2 acting in adipogenesis; the adrenoreceptors beta 2 and 3, as well as hormone-sensitive lipase acting on lipolysis; uncoupling protein 2 acting in mitochondria energy expenditure; and among secreted molecules the cytokine tumor necrosis factor alpha and the hormone leptin (Dahlman and Arner 2007). Major obesity genes are located on chromosomes 2, 10, 11 and 20. Studies of candidate genes indicate that the minor obesity genes control important functions of adipose tissue, and that structural variance in these genes may alter adipose tissue function in a way that promotes obesity (Arner 2000).
Dactylography or the fingerprint system relies on the study of stratum ridges and their configurations (Dermatoglyphics (Derma = skin + Glyph = carving) in the fingers, palms and soles. Estimates that probably there are chances of two people with identical finger impressions are about one in sixty-four thousand million. Heredity and environment arbitrate in combination effects the pattern of ridges (Smail *et al.,* 2019). It has been known for a long time that there is a connection between the ridge pattern and anatomical structures, called volar pads (Cummins, 1929). Volar pads are temporary eminences of the volar skin that form at about the 7th week at the fingertips (apical pads), on the distal part of the palm between the digits (interdigital pads) and in the thenar and hypothenar region (thenar and hypothenar pads). The volar pads become less prominent at around the 10th week and then disappear in human embryos (Kücken and Newell 2005).

The study of fingerprints has been useful in the investigation and identification of certain disorders and syndromes based on the variation of fingerprint patterns and total finger ridge count. In recent years, interest in the medical application of

dermatoglyphic analysis has increased among the clinicians (Smail *et al.,* 2019). Patterns of epidermal ridges have a role in diagnosing and delineating certain syndromes of congenital malformation as well as in establishing twin zygosity in anthropologic surveys and in population genetics (Bhardwaj *et al.,* 2015).

MATERIAL AND METHODS

2:1 MATERIALS

The research was conducted at Koya University between November 2019 and December 2019, on students. A maximum of 120 students (30 normal weight females and 30 obese females and 30 normal weight males and 30 obese males) who belonged to the 18-25 year old age group were randomly selected for study.

white paper divided into four sections, labeled right and left hand for both male and female normal and obese, and further divided into five columns for the thumb-, index-, middle-, and fingerprinting. the horse company's stamp pad of size 45x35 mm is used. The fingerprint was to take away the dirty material absolutely after wiping of hands with tissue paper. Each right and left hand-rolled and plane print was taken for both normal hand and male and female obesity. The fingerprint design (loop, whorl, arch). For this analysis, all persons gathered weight and length to determine the standard and obesity for each individual who then took the fingerprint. Considering normal and obesity according to national health institutes(NIH):

BMI=length×length/weight. A- BMI between 18.5-24.9 is ideal B- BMI over 30 is obesity (Berrington *et al.,* 2010).

2:2 PROCEDURE: (Rastogi *et al.,* 2010):

1-Each subject was asked to wash his hand throughly with soap and water and dry them using a towel.

2-Press his fingertip on the stamp pad and then to the paper to transfer the fingerprint impression. The same method was repeated for all the finger of both hand.

3-The plain fingerprint of all the ten digits were taken separately on the respective block on the same sheet of paper.

4- Care was taken to stop finger slipping to prevent the print from smudging.

5-Results are recorded for determining cases of fingerprints from both normal and obesity

2:3 STATISTICAL ANALYSIS:

The chi-square was applied to examine the relationship between fingerprint and obesity for both right and left hand of male and female (normal and obese). P-values < 0.05 were considered to be statistically significant.

RESULTS

Table 3:1 Distribution of cases based on the sex, normal and obese

sex	Normal	Obesity	Total
Male	30	30	60
Female	30	30	60
Total	60	60	120

Table 3:2 General distributions of primary fingerprint patterns in all fingers of both hands for both sexes.

Types of fingerprints	Total	Percentage
Loops	701	58.41%
Whorls	454	37.83%
Arches	45	3.75%
Total	1200	100%

Table 3:3Distribution of fingerprints pattern among normal and obese man subjects in right hands

Types of fingerprints	Normal	Obese	Total	Chi-square Value:	P value:
Loops	95(63.33%)	78(52%)	173(57.66%)	1.67	0.19
Whorls	51(34%)	64(42.66%)	115(38.33%)	1.46	0.22
Arches	4(2.66%)	8(2.66%)	12(4%)	1.33	0.24
Total	150(100%)	150(100%)	300(100%).		

Table 3:4 Distribution of fingerprints pattern among normal and obese man subjects in left hands

Types of fingerprints	Normal	Obese	Total	Chi-square Value:	P value:
Loops	98(65.33%)	77(51.33%)	175(58.33%)	2.52	0.11

Whorls	42(28%)	62(41.33%)	104(34.66%)	3.84	0.04
Arches	10(6.66%)	11(7.33%)	21(7%)	0.04	0.82
Total	150(100%)	150(100%)	300(100%).		

Table 3:5 Distribution of fingerprints pattern among normal and obese woman subjects in right hands

Types of fingerprints	**Normal**	**Obesity**	**Total**	**Chi-square Value**	**P value**
Loops	84(56%)	96(64%)	180(60%)	0.8	0.37
Whorls	63(42%)	51(34%)	114(38%)	1.26	0.26
Arches	3(2%)	3(2%)	6(2%)	0	1
Total	150(100%)	150(100%)	300(100%)		

Table 3:6 Distribution of fingerprints pattern among normal and obese woman subjects in left hands

Types of fingerprints	**Normal**	**Obesity**	**Total**	**Chi-square Value**	**P value**
Loops	76(50.66%)	97(64.66%)	173(57.66%)	2.54	0.11
Whorls	72(48%)	48(32%)	120(40%)	4.8	0.02
Arches	2(1.33%)	5(3.33%)	7(2.33%)	1.28	0.25
Total	150(100%)	150(100%)	300(100%)		

Table 3:7Distribution of fingerprints pattern in different fingers among normal and obese man subjects in right hands

Fingers	**Thumb**	**Thumb**	**Index**	**Index**	**Middle**	**Middle**	**Ring**	**Ring**	**Little**	**Little**	**Chi-square Value**	**P value:**
	Normal	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**		
Loops	18(60%)	15(50%)	16(53.33%)	13(43.33%)	27(90%)	13(43.33%)	19(63.33%)	18(60%)	23(76.66%)	19(63.33%)	9.44	0.39
Whorls	12(40%)	15(50%)	11(36.66%)	13(43.33%)	3(10%)	17(56.66%)	11(36.66%)	9(30%)	7(23.33%)	10(33.33%)	13.11	0.15
Arches	0(0%)	0(0%)	3(10%)	4(13.33%)	0(0%)	0(0%)	0(0%)	3(10%)	0(0%)	1(3.33%)	20.81	0.01
Total	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)		

Table 3:8 Distribution of fingerprints pattern in different fingers among normal and obese man subjects in left hands

Fingers	**Thumb**	**Thumb**	**Index**	**Index**	**Middle**	**Middle**	**Ring**	**Ring**	**Little**	**Little**	**Chi-square Value**	**P value:**
	Normal	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**		

Loops	21(70%)	18(60%)	13(43.33%)	10 (33.33%)	21(70%)	17(56.66%)	19(63.33%)	17(56.66%)	24(80%)	19(63.33%)	8.20	0.51
Whorls	8(26.66%)	12(40%)	12(40%)	13(43.33%)	5(16.66%)	11(36.66%)	11(36.66%)	13(43.33%)	6(20%)	9(30%)	7.4	0.59
Arches	1(3.33%)	0(0%)	5(16.66%)	7(23.33%)	4(13.33%)	2(6.66%)	0(0%)	0(0%)	0(0%0	2(6.66%)	26.14	0.00
Total	30(100%0	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)		

Table 3:9Distribution of fingerprints pattern in different fingers among normal and obese woman subjects in right hands

Fingers	**Thumb**	**Thumb**	**Index**	**Index**	**Middle**	**Middle**	**Ring**	**Ring**	**Little**	**Little**	**Chi-square Value**	**P value:**
	Normal	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**		
Loops	18(60%)	16(53.33%)	14(46.66%)	16(53.33%)	21(70%)	24(80%)	12(40%)	14(46.66%)	20(66.66%)	26(86.66%)	10.43	0.31
Whorls	12(40%)	14(46.66%)	16(53.33%)	12(40%)	6(20%)	5(16.66%)	18(60%)	16(53.33%)	10(33.33%)	4(13.33%)	19.47	0.02
Arches	0(0%)	0(0%)	0(0%)	2(6.66%)	3(10%)	1(3.33%)	0(0%)	0(0%)	0(0%)	0(0%)	17.33	0.04
Total	30(100%)	30(100%)	30(100%)	30(100%)	30(100)	30(100%)	30(100)	30(100%)	30(100%)	30(100%)		

able 3:10 Distribution of fingerprints pattern in different fingers among normal and obese woman subjects in left hands

Fingers	**Thumb**	**Thumb**	**Index**	**Index**	**Middle**	**Middle**	**Ring**	**Ring**	**Little**	**Little**	**Chi-square Value**	**P value:**
	Normal	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**	**Normal**	**Obesity**		
Loops	17(56.66%)	18(60%)	12(40%)	13(43.33%)	17(56.66%)	23(76.66%)	11(36.66%)	16(53.33%)	19(63.33%)	27(90%)	12.60	0.18
Whorls	12(40%)	12(40%)	18(60%)	14(46.66%)	12(40%)	6(20%)	19(63.33%)	13(43.33%)	11(36.66%)	3(10%)	17.33	0.04
Arches	1(3.33%)	0(0%)	0(0%)	3(10%)	1(3.33%)	1(3.33%)	0(0%)	1(3.33%)	0(0%)	0(0%)	11.57	0.2
Total	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)	30(100%)		

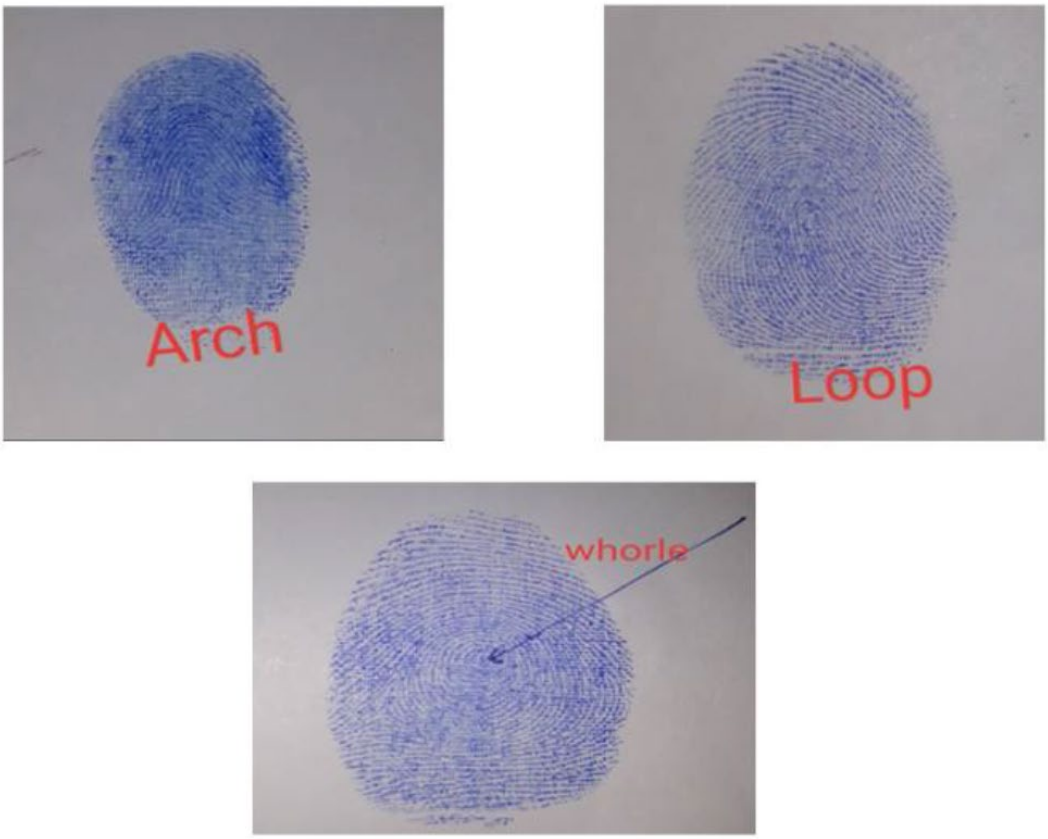

Figure 3:1 Pattern of the primary fingerprints.

DISCUSSION

This study reveals the relation between the distribution of dermatoglyph (dactylography, fingerprint), obesity and gender. A total of 120 subjects randomly chosen from Koya University, among 120 subjects 60 male (30 normal, 30 obese) and 60 females (30 normal, 30 obese). General distribution of primary fingerprint patterns for both genders in all fingers on both hands According to the fingerprint loop types has a greater number than other types (whorl and arch) (Tables 1 and 2).

Loop are the most common types of fingerprints, accounts about 65%. when one or more than one ridge from one side of the pattern and recurve to exist from the same side of point of entry it forms a loop while The whorls fingerprint pattern may be spiral, oval, circular or any variety of a circle and account for approximately 30%. On the other hand, Arch are simplest pattern but rare (about 5%). The fingerprint pattern has ridges running from one side to the other side of the print without having any re-curve (Azhagiri *et al.,* 2018).

According to the type of fingerprint loops average in normal male was (63.33%) and in obese male (52%) and whorl in normal male were (34%) while in obese male (42.66%) and arch in both types were (2.66%). According to the type of fingerprint loops average in normal male and female were

(65.33%) and in obesity were (51.33%) and whorl type in normal were (28%) while in obesity (41.33%) and arch in normal was (6.66%) while in obesity (7.33%) according to the P-value there is relation between fingerprint and obesity in (whorl type) which is (0.04) (table 3 and 4).
According to the type of fingerprint, the loop has a larger average than the other types and there is no relationship between variables. Depending on the type of fingerprint loops in normal were (50.66%) while in obesity (64.66%) and whorl in normal were (48%) and in obesity (32%), arch in normal was (1.33%) and in obesity (3.33%) regarding to P-value there is relation between variable in whorl .loop in normal has larger average number than in obesity in thumb finger, while in normal index finger average number is larger than in obesity, and in middle finger, the normal has larger average number than in obesity, also in little and ring finger normal has larger average number than in obesity, according to P-value there is no relation between variables (fingerprint and obesity) (table 5 and 6).
Whorl in obesity has a larger average number than normal in the thumb finger, a larger number also in the index and middle obesity than usual, and a larger average number in the finger than in obesity, a larger average number in small finger obesity than usual, and no relation between variables. Arch in normal and obesity is equal which is (0 percent) in thumb, and an index, obesity has a greater average number than regular, even in the middle average number is equal which is (0 percent), and ring and tiny the average number in obesity is greater than in obesity, according to P-value the arch is (0.01) meaning there is a relationship between fingerprint and obesity (table 7)
Loop average number in all fingers the normal has a larger range than in obesity Whorl average number in all fingers the obesity has a larger number than in normal Arch in thumb the normal has larger rang than in obesity, in index the obesity has larger range than in normal and in middle, the obesity has smaller ranger than in obesity, the range is equal in ring finger and in little the obesity has larger rang than in normal according to the P-value, arch were (0.00) this mean that there is pure relation between fingerprint and obesity (table 8).
Loop type in thumb the normal has a larger range than in obesity, and in other fingers (index, middle, ring, little) the normal has a smaller range than in obesity. Whorl type in thumb the normal has smaller range than in obesity, and in other fingers (index, middle, ring, little) the normal has larger range than in obesity Arch in thumb, ring and little the average number is equal which is (0%) and in index normal has (0%) and in obesity (6.66%), while in middle the normal has (10%) and obesity (3.33%), depending on the P-value in whorl and arch the variables has relation between them (table 9).
Loop in all fingers the obesity has larger average number than in normal Whorl in thumb the normal and obesity has equal which is (40%), in other fingers (index, middle, ring, little) the obesity has smaller range than in normal Arch in thumb the normal has larger range than obesity and in index, the normal was (0%) while in obesity (10%), in middle there is equal range of normal and obesity, and ring normal were (0%) while obesity (3.33%), in little the range, were equal in normal and obesity, according to the P-value in whorl type the variables has relationship between them (table 10).

CONCLUSION

Conclusively, there was an association between the distribution of fingerprint pattern and obesity of whorl in the left hand of normal and obesity man and woman subjects . on the other hands, there is the relation between Arche patterns from both hands of normal and obese man subjects from

different fingers while only links between arches in right hands of woman subjects among students in Koya university thus it is possible to predict obesity based on the fingerprint.

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