

May 2013 Ib Biology Paper 3

"Focusing on three forms of biological threat--bioterrorism, biocrime and biohacking--the author examines the history of biowarfare and terrorism, including the ideologies and motives of violent extremist organizations. Groups drawn to biological aggression are discussed, along with the array of viruses, bacteria and toxins they might use in their attacks"--

Using quantitative techniques, this volume provides empirical evidence on the crucial role of public provisioning of food, water, sanitation and health care in reducing undernutrition among women and children in India. The linkages are cogently explored and connected to the sustainable development goals. Key data comes from recent large secondary sources at district, household and individual levels and the econometric methodologies are clearly explained. Taken as a whole, it highlights the effects of public provisioning on malnutrition and identifies the relative importance of agricultural growth in resolving the nutrition problems in rural and semi-urban areas of India. This edited volume will be valuable reading for advanced graduate students, researchers and practitioners in development economics, development studies, and nutrition and public health.

Neuropsychiatric diseases, such as schizophrenia, Alzheimer's disease,

and etc., represent a serious medical and socioeconomic problems. These diseases are often accompanied by impairments of cognitive function, e.g., abstract thinking, decision-making, attention, and several types of memory. Such deficits significantly disrupt quality of life and daily functioning of patients. Cognitive deficits in neuropsychiatric diseases are associated with alterations of brain morphology and function, and are often resistant to therapeutic interventions. In schizophrenia and related disorders, cognitive deficits are also defined as endophenotypes, i.e. measurable phenotypes linking these diseases with discrete heritable and reproducible traits. This points to the importance of elucidating these endophenotypes in translational studies. Animal models may not mimic the full spectrum of clinical symptoms, but may act as analogies of particular behaviors or other pathological outcomes. They are useful to search for the etiology of particular psychiatric illnesses and novel therapeutics. Moreover, several behavioral tests to measure cognitive performance in rodents and other species have been implemented. The primary focus of the present topic is to provide up-to-date information on cognitive deficits of neuropsychiatric disorders, such as schizophrenia. This Research Topic also delineates future directions for translational studies aimed at developing novel treatments/interventions of cognitive disturbances.

Dance Leadership

Handbook Of Climate Change And Agroecosystems: The Agricultural Model Intercomparison And Improvement Project (Agmip) Integrated Crop And Economic Assessments — Joint Publication With Asa, Cssa, And Sssa (In 2 Parts)

Oswaal 35 Year's NEET UG Solved Papers 1988-2022 + NCERT Textbook Exemplar Physics, Chemistry, Biology (Set of 6 Books) (For 2023 Exam)

Future Prospects for Food and Feed Security

Research and Applications in Global Supercomputing

Principles of Virology, the leading virology textbook in use, is an extremely valuable and highly informative presentation of virology at the interface of modern cell biology and immunology. This text utilizes a uniquely rational approach by highlighting common principles and processes across all viruses. Using a set of representative viruses to illustrate the breadth of viral complexity, students are able to understand viral reproduction and pathogenesis and are equipped with the necessary tools for future encounters with new or understudied viruses. This fifth edition was updated to keep pace with the ever-changing field of virology. In addition to the beloved full-color illustrations, video interviews with leading scientists, movies, and links to exciting blogposts on relevant topics, this edition includes study questions and active learning puzzles in each chapter, as well as short descriptions regarding the key messages of

references of special interest. **Volume I: Molecular Biology** focuses on the molecular processes of viral reproduction, from entry through release. **Volume II: Pathogenesis and Control** addresses the interplay between viruses and their host organisms, on both the micro- and macroscale, including chapters on public health, the immune response, vaccines and other antiviral strategies, viral evolution, and a brand new chapter on the therapeutic uses of viruses. These two volumes can be used for separate courses or together in a single course. Each includes a unique appendix, glossary, and links to internet resources. **Principles of Virology, Fifth Edition**, is ideal for teaching the strategies by which all viruses reproduce, spread within a host, and are maintained within populations. This edition carefully reflects the results of extensive vetting and feedback received from course instructors and students, making this renowned textbook even more appropriate for undergraduate and graduate courses in virology, microbiology, and infectious diseases.

Accurate. Reliable. Engaging. These are just a few of the words used by adopters and reviewers of John Santrock's **Child Development**. The new topically-organised fourteenth edition continues with Santrock's highly contemporary tone and focus, featuring over 1,000 new citations. The popular **Connections** theme shows students the different aspects of children's development to help them better understand the concepts. Used by hundreds of thousands of students

over thirteen editions, Santrock's proven learning goals system provides a clear roadmap to course mastery.

Policing and ecological crises – and all the inequalities, discrimination, and violence they entail – are pressing contemporary problems. Ecological degradation, biodiversity loss, and climate change threaten local communities and ecosystems, and, cumulatively, the planet as a whole. Police brutality, wars, paramilitarism, private security operations, and securitization more widely impact people – especially people of colour – and habitats. This edited collection explores their relationship, and investigates the numerous ways in which police, security, and military forces intersect with, reinforce, and facilitate ecological and climate catastrophe. Employing a case study-based approach, the book examines the relationships and entanglements between policing and ecosystems, revealing the intimate connection between political violence and ecological degradation.

New Insights into Cardiovascular Mechanobiology: Molecular Basis and Clinical Perspectives

Trends in Muscle and Tendon Molecular and Cell Biology

Structure-Related Intrinsic Electrical States and Firing Patterns of Neurons With Active Dendrites

Interleukin-33 Biology in Tissue Development, Homeostasis and Disease

Principles of Virology

The Role of Steroid Hormones and Growth Factors in Cancer

Activity of the multi-functional networked neurons depends on their intrinsic states and bears both cell- and network-defined features. Firing patterns of a neuron are conventionally attributed to spatial-temporal organization of inputs received from the network-mates via synapses, in vast majority dendritic. This attribution reflects widespread views of the within-cell job sharing, such that the main function of the dendrites is to receive signals and deliver them to the axo-somatic trigger zone, which actually generates the output pattern. However, these views are now revisited due to finding of active, non-linear properties of the dendritic membrane practically in neurons of practically all explored types. Like soma and axon, the dendrites with active membrane are able to generate self-maintained, propagating depolarizations and thus share intrinsic pattern-forming role with the trigger zone. Unlike the trigger zone, the dendrites have complex geometry, which is subject to developmental, activity-dependent, or neurodegenerative changes. Structural features of the arborization inevitably impact on

electrical states and cooperative behavior of its constituting parts at different levels of organization, from sub-trees and branches to voltage- and ligand-gated ion channels populating the dendritic membrane. More than two decades of experimental and computer simulation studies have brought numerous phenomenological demonstrations of influence of the dendritic structure on neuronal firing patterns. A necessary step forward is to comprehend these findings and build a firm theoretical basis, including quantitative relationships between geometrical and electrical characteristics determining intrinsic activity of neurons. The articles in this eBook represent progress achieved in a broad circle of laboratories studied various aspects of structure and function of the neuronal dendrites. The authors elucidate new details of dendritic mechanisms underlying intrinsic activity patterns in neurons and highlight important questions that remain open in this important domain of cellular and computational neuroscience.

*Ebook: The Science of Psychology: An Appreciative View
This exciting new edition of the successful textbook for students of Middle Eastern politics provides a highly relevant*

and comprehensive introduction to the complexities of a region in constant flux. Combining a thematic framework for examining patterns of politics with individual chapters dedicated to specific countries, the book places the very latest developments and long-standing issues within an historical context, introducing key concepts from comparative politics to further explore the interaction between Middle Eastern history and the region's contemporary political development. Presenting information in an accessible and inclusive format, the book offers:

- Coverage of the historical influence of colonialism and major world powers on the shaping of the modern Middle East.*
- A detailed examination of the legacy of Islam.*
- Analysis of the political and social aspects of Middle Eastern life: alienation between state and society, poverty and social inequality, ideological crises and renewal.*
- Case studies on countries in the Northern Belt (Turkey and Iran); the Fertile Crescent (Iraq, Syria and Lebanon, Israel/Palestine); and those West and East of the Red Sea (Egypt and the members of the Gulf Cooperation Council), moving through an historical examination to close analysis of the most recent developments and their*

political and social impacts. • Extensive pedagogical features, including original maps and further reading sections, provide essential support for the reader. A key introductory text for students of Middle Eastern politics and history at advanced undergraduate and postgraduate levels, this new edition has been extensively updated to also become a timely and significant reference for policy-makers and any motivated reader.

Evolutionary Feedbacks Between Population Biology and Genome Architecture

Wnt Signaling at the Plasma Membrane: Activation, Regulation and Disease Connection

*Caregiving, Carebots, and Contagion
Biology*

Ebook: Child Development: An Introduction

Principles of Virology, Volume 2

Through diverse engagements with natural resource extraction and ecological vulnerability in the contemporary Arctic, contributors to this volume apprehend Arctic resource regimes through the concept of abstraction. Abstraction refers to the creation of new material substances and cultural values by

detaching parts from existing substances and values. The abstractive process differs from the activity of extractive industries by its focus on the conceptual resources that conceal processes of exploitation associated with extraction. The study of abstraction can thus help us attune to the formal operations that make appropriations of value possible while disclosing the politics of extraction and of its representation.

The economic importance of lactic acid bacteria (LAB) for the food industry and their implication in health and disease has rendered them attractive models for research in many laboratories around the world. Over the past three decades, molecular and genetic analysis of LAB species provided important insights into the biology and application of starter and probiotic LAB and in the virulence of LAB pathogens. The knowledge obtained prepared LAB researchers for the forthcoming opportunities provided by the advent of microbial genomics. Today, developments in next-generation sequencing technologies have rocketed LAB genome research and the sequences of several hundreds of strains are available. This flood of information has revolutionized our view of LAB. First of all, a detailed picture

has emerged about the evolutionary mechanisms allowing LAB to inhabit the very diverse ecological niches in which they can be found. Adaptation of LAB to nutrient-rich environments has led to degenerative evolution processes that resulted in shortening of chromosomes and simplified metabolic potential. Gene acquisition through horizontal transfer, on the other hand, is also important in shaping LAB gene pools. Horizontally acquired genes have been shown to be essential in technological properties of starters and in probiosis or virulence of commensals. Progress in bioinformatics tools has allowed rapid annotation of LAB genomes and the direct assignment of genetic traits among species/strains through comparative genomics. In this way, the molecular basis of many important traits of LAB has been elucidated, including aspects of sugar fermentation, flavor and odor formation, production of textural substances, stress responses, colonization of and survival in the host, cell-cell interactions and pathogenicity. Functional genomics and proteomics have been employed in a number of instances to support in silico predictions. Given that the costs of advanced next-generation methodologies like RNA-seq are dropping fast,

bottlenecks in the in silico characterization of LAB genomes will be rapidly overcome. Another crucial advancement in LAB research is the application of systems biology approaches, by which the properties and interactions of components or parts of a biological system are investigated to accurately understand or predict LAB behavior. Practically, systems biology involves the mathematical modeling of complex biological systems that can be refined iteratively with wet-lab experiments. High-throughput experimentation generating huge amounts of data on the properties and quantities of many components such as transcripts, enzymes and metabolites has resulted in several systems models of LAB. Novel techniques allow modelling of additional levels of complexity including the function of small RNAs, structural features of RNA molecules and post-translational modifications. In addition, researchers have started to apply systems approaches in the framework of LAB multispecies ecosystems in which each species or strain is considered as a part of the system. Metatranscriptomics, metaproteomics and metabolomics offer the means to combine cellular behavior with population dynamics in microbial

consortia.

The mission of the International Journal of Educational Reform (IJER) is to keep readers up-to-date with worldwide developments in education reform by providing scholarly information and practical analysis from recognized international authorities. As the only peer-reviewed scholarly publication that combines authors' voices without regard for the political affiliations perspectives, or research methodologies, IJER provides readers with a balanced view of all sides of the political and educational mainstream. To this end, IJER includes, but is not limited to, inquiry based and opinion pieces on developments in such areas as policy, administration, curriculum, instruction, law, and research. IJER should thus be of interest to professional educators with decision-making roles and policymakers at all levels turn since it provides a broad-based conversation between and among policymakers, practitioners, and academicians about reform goals, objectives, and methods for success throughout the world. Readers can call on IJER to learn from an international group of reform implementers by discovering what they can do that has actually worked. IJER can

also help readers to understand the pitfalls of current reforms in order to avoid making similar mistakes. Finally, it is the mission of IJER to help readers to learn about key issues in school reform from movers and shakers who help to study and shape the power base directing educational reform in the U.S. and the world.

Cognitive deficits in schizophrenia and other neuropsychiatric disorders: Convergence of preclinical and clinical evidence

Ebook: The Science of Psychology: An Appreciative View

Enforcing Ecocide

Omics and Systems Approaches to Study the Biology and Applications of Lactic Acid Bacteria

Arctic Abstractive Industry

Oswaal Biology Topper's Handbook + 35 Years' NEET UG Solved Papers 1988-2022 (Set of 2 Books) (For 2023 Exam)

Latest NEET Question Paper 2022- Fully solved Chapter-wise & Topic-wise Previous Questions to enable quick revision Previous Years' (1988-2022)

Exam Questions to facilitate focused study Mind Map: A single page snapshot of the entire chapter for longer retention Mnemonics to boost memory and confidence Revision Notes: Concept based study material Oswaal QR Codes:

Easy to scan QR codes for online content Analytical Report: Unit-wise questions distribution in each subject Two SQPs based on the latest pattern Tips to crack NEET Top 50 Medical Institutes Ranks Trend Analysis: Chapter-wise

IJER Vol 25-N3 Rowman & Littlefield

Dear reader, I am sure that the Iguazu National Park is among the tourist places where the natural beauty most enchanted me. Even after visiting it for the second time, the excitement is still the same. This majestic park is the most visited in Argentina and is among the three most visited tourist spots in Brazil. It is among the most well-classified tourist sites as World Heritage Site. Just visit it to understand these numbers. Its beauty may not be described through words or photos. It is necessary to be there and feel, to live the essence of that place. Iguazu River is huge, noisy and is characterized by numerous waterfalls which are simply fantastic. In the second half of the book will be presenting to you the bird park that is located in Brazil near the Iguassu National Park. The bird park is a must-see tourist spot for nature lovers. I hope this book can give you an idea of the magic of that place. I hope you can one day visit and share the same opinion.

For the Ib Diploma

*Oswaal 35 Years' NEET UG Solved Papers Chapterwise & Topicwise Biology
1988-2022 (For 2023 Exam)*

Bioterrorism, Biocrime and Biohacking

The Weaponizing of Biology

Iguazu Falls

IJER Vol 25-N3

Presents a multifaceted model of understanding, which is based on the premise that people can demonstrate understanding in a variety of ways.

“ Top agricultural scientists from around the world have taken up the challenge of sustainable agriculture, with the specific focus on integrating agronomic, climatological, biophysical and socio-economic perspectives and processes. Every chapter (of the Handbook) contributes to addressing the growing food-security challenges facing the world.” Foreword by Jeffrey Sachs, Director of the Earth Institute at Columbia University

Climate effects on agriculture are of increasing concern in both the scientific and policy communities because of the growing population and the greater uncertainty in the weather during growing seasons. Changes in production are directly linked to variations in temperature and precipitation during the growing season and often to the offseason changes in weather because of soil water storage to replenish the soil profile. This is not an isolated problem but one of worldwide interest because each country

has concerns about their food security. The Agricultural Model Intercomparison and Improvement Project (AgMIP) was developed to evaluate agricultural models and intercompare their ability to predict climate impacts. In sub-Saharan Africa and South Asia, South America and East Asia, AgMIP regional research teams (RRTs) are conducting integrated assessments to improve understanding of agricultural impacts of climate change (including biophysical and economic impacts) at national and regional scales. Other AgMIP initiatives include global gridded modeling, data and information technology (IT) tool development, simulation of crop pests and diseases, site-based crop-climate sensitivity studies, and aggregation and scaling.

Pain Medicine, a relatively new specialty, has proven increasingly relevant to medical practitioners in every field. The specialism of pain has emerged over the past 50 years, largely due to the persistence of experts and new medical evidence that points to its necessity. Today, it is a distinct and integral part of global medical practice. Landmark Papers in Pain offers a comprehensive inventory of over 80 key studies in pain medicine from the last 100 years. Each paper is accompanied by a concise commentary on the significance of the original findings written by an expert in pain. The reviews discuss how the paper influenced the development of the speciality, and how the findings have advanced our global comprehension of pain. Together, the selected papers and

reviews chart the growth of an embryonic field into the modern speciality of pain medicine. Compiled by leading specialists in the field, the papers included in this book are significant for any student, researcher, clinical practitioner, or medical historian interested in pain medicine. Organised into eight distinct topics and cross-referenced by topics and author of original paper, the book is comprehensive in its coverage and easy to use. A review of the contemporary and historical research that shaped the speciality of pain, Landmark Papers in Pain is essential reading for all medical practitioners with an interest in pain medicine.

Anatomy & Physiology

Advanced HPC-based Computational Modeling in Biomechanics and Systems Biology

Proceedings of RBMP 2018 - Plant Molecular Biology

For the IB diploma

Government and Politics of the Contemporary Middle East

Undernutrition, Agriculture and Public Provisioning

This “what is”—rather than “how to”— volume proposes a theoretical framework for understanding dance leadership for dancers, leaders, and students of both domains, illustrated by portraits of leaders in action in India, South Africa, UK, US, Brazil and Canada. What is dance leadership?

Who practices it, in what setting, and why? Through performance, choreography, teaching, writing, organizing and directing, the dance leaders portrayed herein instigate change and forward movement. Illustrating all that is unique about leading in dance, and by extension the other arts, readers can engage with such wide-ranging issues as: Does the practice of leading require followers? How does one individual's dance movement act on others in a group? What does 'social engagement' mean for artists? Is the pursuit of art and culture a human right?

The most comprehensive coverage of the new 2014 syllabus for both SL and HL, this completely revised edition gives you unrivalled support for the new concept-based approach to learning, the Nature of Science. The only DP Biology resource that includes support straight from the IB, integrated exam work helps you maximize achievement.

• Chapter-wise and Topic-wise presentation • Latest NEET Question Paper 2022- Fully solved • Chapter-wise & Topic-wise Previous Questions to enable quick revision • Previous Years' (1988-2022) Exam Questions to facilitate focused study • Mind Map: A single page snapshot of the entire chapter for longer retention • Mnemonics to boost memory and confidence • Revision Notes: Concept based study material • Oswaal QR Codes: Easy

to scan QR codes for online content • Analytical Report: Unit-wise questions distribution in each subject • Two SQPs based on the latest pattern • Tips to crack NEET • Top 50 Medical Institutes Ranks • Trend Analysis: Chapter-wise

Power, Policing & Planetary Militarization

The Impact on Women and Children in India

Biology 2e

IB Biology Course Book

Astrocytic-neuronal-astrocytic Pathway Selection for Formation and Degradation of Glutamate/GABA

Edible Insects

This comprehensive Study Guide reinforces all the key concepts for the 2014 syllabus, ensuring students develop a clear understanding of all the crucial topics at SL and HL. Breaking concepts down into manageable sections and with diagrams and illustrations to cement understanding, exampreparation material is integrated to build student confidence and assessment potential. Directly linked to the Oxford Biology Course Book to extend and sharpen comprehension, this book supports maximum achievement in the course and assessment.About the series:Reinforce student understanding of all the crucial subject

material. Fully comprehensive and matched to the most recent syllabuses, these resources provide focused review of all important concepts, tangibly strengthening assessment potential. Chapter-wise and Topic-wise presentation Latest NEET Question Paper 2022- Fully solved Chapter-wise & Topic-wise Previous Questions to enable quick revision Previous Years' (1988-2022) Exam Questions to facilitate focused study Mind Map: A single page snapshot of the entire chapter for longer retention Mnemonics to boost memory and confidence Revision Notes: Concept based study material Oswaal QR Codes: Easy to scan QR codes for online content Analytical Report: Unit-wise questions distribution in each subject Two SQPs based on the latest pattern Tips to crack NEET Top 50 Medical Institutes Ranks Trend Analysis: Chapter-wise

Rapidly generating and processing large amounts of data, supercomputers are currently at the leading edge of computing technologies. Supercomputers are employed in many different fields, establishing them as an integral part of the computational sciences. Research and Applications in Global Supercomputing investigates current and emerging research in the field, as well as the application of this technology to a variety of areas. Highlighting a broad range of concepts, this publication is a comprehensive reference source for professionals, researchers, students, and

practitioners interested in the various topics pertaining to supercomputing and how this technology can be applied to solve problems in a multitude of disciplines.

Continuity and change

Mitochondrial Genomes and Mitochondrion Related Gene Insights to Fungal Evolution

Assembling the Valuable and Vulnerable North

Autism Spectrum Disorders: From Genotypes to Phenotypes Theory Into Practice

Seminal Papers in Pain with Expert Commentaries

This work explores caring robots' lifesaving benefits, particularly during contagion, while probing the threat they pose to interpersonal engagement and genuine human caregiving. As humans, we have a binding moral responsibility to care for the Other, and genuine caring demands our embodied, human-to-human presence.

Principles of Virology, the leading virology textbook in use, is an extremely valuable and highly informative presentation of virology at the interface of modern cell biology and immunology. This text utilizes a uniquely rational approach by highlighting common principles and processes across all viruses. Using a set of representative viruses to illustrate the breadth of viral complexity, students are able to understand viral reproduction and pathogenesis

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and are equipped with the necessary tools for future encounters with new or understudied viruses. This fifth edition was updated to keep pace with the ever-changing field of virology. In addition to the beloved full-color illustrations, video interviews with leading scientists, movies, and links to exciting blogposts on relevant topics, this edition includes study questions and active learning puzzles in each chapter, as well as short descriptions regarding the key messages of references of special interest. Volume I: Molecular Biology focuses on the molecular processes of viral reproduction, from entry through release. Volume II: Pathogenesis and Control addresses the interplay between viruses and their host organisms, on both the micro- and macroscale, including chapters on public health, the immune response, vaccines and other antiviral strategies, viral evolution, and a brand new chapter on the therapeutic uses of viruses. These two volumes can be used for separate courses or together in a single course. Each includes a unique appendix, glossary, and links to internet resources. Principles of Virology, Fifth Edition, is ideal for teaching the strategies by which all viruses reproduce, spread within a host, and are maintained within populations. This edition carefully reflects the results of extensive vetting and feedback received from course instructors and students, making this renowned textbook even more appropriate for undergraduate and graduate courses

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in virology, microbiology, and infectious diseases. Endocrinological research early recognized the importance of intercellular interactions and realized the importance of glutamatergic and GABAergic signaling. In turn this signalling depends on elaborate interactions between astrocytes and neurons, without which neurons would be unable to produce, reuse and metabolize transmitter glutamate and GABA. Details of these subjects are described in this Research Topic by key investigators in this field. It focuses on the intricate and extremely swift pathway producing these amino acid transmitters from glucose in brain but also discusses difficulties in determining expression of some of the necessary genes in astrocytes and related processes in pancreatic islets. However, it does not discuss how closely associated astrocytes and neurons are anatomically, enabling these interactions. This is elegantly shown in this cover image, kindly provided by Professor Andreas Reichenbach (University of Leipzig, Germany).

Pathogenesis and Control

Landmark Papers in Pain

Understanding by Design

Oswaal 35 Years' NEET UG Solved Papers Physics, Chemistry & Biology

1988-2022 (Set of 3 books) (For 2023 Exam)

This eBook presents all 10 articles published under the Frontiers Research Topic

"Evolutionary Feedbacks Between Population Biology and Genome Architecture", edited by Scott V. Edwards and Tariq Ezaz. With the rise of rapid genome sequencing across the Tree of Life, challenges arise in understanding the major evolutionary forces influencing the structure of microbial and eukaryotic genomes, in particular the prevalence of natural selection versus genetic drift in shaping those genomes. Additional complexities in understanding genome architecture arise with the increasing incidence of interspecific hybridization as a force for shaping genotypes and phenotypes. A key paradigm shift facilitating a more nuanced interpretation of genomes came with the rise of the nearly neutral theory in the 1970s, followed by a greater appreciation for the contribution of nonadaptive forces such as genetic drift to genome structure in the 1990s and 2000s. The articles published in this eBook grapple with these issues and provide an update as to the ways in which modern population genetics and genome informatics deepen our understanding of the subtle interplay between these myriad forces. From intraspecific to macroevolutionary studies, population biology and population genetics are now major tools for understanding the broad landscape of how genomes evolve across the Tree of Life. This volume is a celebration across diverse taxa of the contributions of population genetics thinking to genome studies. We hope it spurs additional research and clarity in the ongoing search for rules governing the

evolution of genomes.

This Research Topic covers the pathogenetic processes in Autism Spectrum Disorder (ASD) that underpin the translation of genetic vulnerability to clinically significant symptoms. Available research data in ASD suggests that it is a neural connectivity disorder and that the social communication and related neurobehavioural symptoms result from reduced synchronization between key "social brain" regions. These interconnected neural systems can be understood through the relationship between functionally relevant anatomic areas and neurochemical pathways, the programming of which are genetically modulated during neurodevelopment and mediated through a range of epigenetic and environmental modulators. Elucidating the underlying molecular mechanisms can provide an invaluable window for understanding the neural wiring that regulates higher brain functions and consequent clinical phenotypes. In keeping with the multi modal and diverse origins of ASD, this Research Topic explores the genetic underpinnings and environmental modulation in the aetiology; neural substrates, biomarkers and endophenotypes that underlie clinical characteristics; as well as neurochemical pathways and pathophysiological mechanisms that pave the way for therapeutic interventions. Furthermore, since genetically mediated deficits and consequent functional impairments involve activity-dependent synapse development

that depends on postnatal learning and experience, the trajectory towards the final clinical expression could be modulated by early interventions that exploit the neuronal maturation and brain plasticity. However, identifying these diverse pathogenetic processes and tailoring interventions would require subtyping ASD into homogeneous subgroups. In this regard, this topic covers the current state of evidence in the literature through topic reviews as well as ongoing original work that provides tangible hypotheses and directions for future research.

Edible insects have always been a part of human diets, but in some societies there remains a degree of disdain and disgust for their consumption. Insects offer a significant opportunity to merge traditional knowledge and modern science to improve human food security worldwide. This publication describes the contribution of insects to food security and examines future prospects for raising insects at a commercial scale to improve food and feed production, diversify diets, and support livelihoods in both developing and developed countries. Edible insects are a promising alternative to the conventional production of meat, either for direct human consumption or for indirect use as feedstock. This publication will boost awareness of the many valuable roles that insects play in sustaining nature and human life, and it will stimulate debate on the expansion of the use of insects as food and feed.