The (November-December) Christmas 2016 Newsletter of
The GP-TCM Research Association

Merry Christmas and Happy New Year from your Co-editors in Cambridge and London, England!


Breaking News No. 1

中华人民共和国主席令

第五十九号

《中华人民共和国中医药法》已由中华人民共和国第十二届全国人民代表大会常务委员会第二十五次会议于2016年12月25日通过，现予公布，自2017年7月1日起施行。

中华人民共和国主席 习近平

2016年12月25日

First TCM law passed, to promote healthy progress

Shan Juan
Updated: Dec 26,2016 7:22 AM China Daily

China's first law on traditional Chinese medicine (TCM) was passed by the top legislature on Dec 25 to ensure development of the time-honored medical science and enhance the public's ability to access more quality products and related services. The law will take effect on July 1. "It is a milestone for TCM development as it's recognized by law," Wang Guoqiang, Head of the State Administration of TCM, said at a news conference on Dec 25.

The law is also an indication of public demand and expectations for TCM, which has proved effective but at times cannot be easily defined or regulated by mainstream Western medical approaches, he said. "The adoption of the law is only a start, and more matching policies and regulations will follow in the spirit of the law boosting TCM."

TCM long ago was the only treatment available in China, but Western medicine first introduced in the Qing Dynasty (1644-1911) began to dominate over time. In recent years, some have even called on authorities to drop TCM's status as a legally accepted treatment option. The law recognizes TCM as an important part of the country's healthcare system and encourages TCM's development. It also allows it to be managed and regulated according to its own characteristics.

Unlike many doctors of Western medicine, some TCM practitioners learned their skills from a master instead of going through a standard school education. But "many do command great skill. The law allows them to get a license to practice TCM and go mainstream", said Deng Yong, a researcher of law at Beijing University of Chinese Medicine. The new law stipulates that practitioners must pass exams highlighting practical skills and treatment outcomes by provincial-level TCM authorities, and obtain recommendations from two certified practitioners. That's a major breakthrough as "many competent TCM doctors work underground since they couldn't pass the exams for medical doctors that focus on Western medicine or the English tests", he explained. The law also makes it easier to open individual practices and clinics by requiring only the filing of a record at the local health authority, instead of an approval, he added.

There are 3,966 TCM hospitals and 42,528 TCM clinics across the country with roughly 452,000 practitioners, according to a white paper on TCM issued by the State Council Information Office this month. Annually, they receive an average 910 million visits nationwide.

"The law will help bring more competent TCM doctors to the patients," said Wang Guoqiang. By clearly setting the boundaries of treatment, the law helps eliminate fake TCM doctors who often boast they can cure all diseases, Deng said. "That protects patients' rights and health and the reputation of TCM," he said. TCM products and services can be advertised only with approval from the local TCM authority, the law stipulates. To safeguard consumers' health, the law also calls for strengthened management and quality control over TCM raw materials and related procedures including raising, planting, collecting and stocking such materials. Highly toxic pesticides cannot be used to cultivate medicinal herbs.

Breaking News No. 2

The 6th Annual GP-TCM RA Meeting will be hosted by the Royal Botanic Gardens, Kew, United Kingdom, on 26-28 July 2017. Please mark these dates in your calendar. More details will follow in the next Newsletter and on our website.

Breaking News No. 3

The new President, President-Elect and BoD members to take office on 1 January 2017.

Many hearty congratulations to Prof. Aiping Lu, for his election to President-Elect, and to the following members of the new Board of Directors: Prof. Pierre Duez - 66 votes (94%), Prof. Monique Simmonds - 60 votes (86%), Prof. Rudi Bauer – 57 votes (81%), Dr. Qihe Xu - 57 votes (81%), Prof. Rob Verpoorte - 50 votes (71%), Prof. Vivian Wong - 50 votes (71%), Prof. Thomas Efferth - 46 votes (66%) and Associate Prof. Clara Bik-San Lau - 44 votes (63%). Starting 1 January 2017, President Tai-Ping Fan will lead this new team to serve you for two years. Prof. De-an Guo will become Past-President and Prof. Peter Hylands has generously agreed to serve as Treasurer.

To quote Monique Simmonds' sentiments, a big welcome to Clara Lau who represents new blood onto the Board. Welcome back to Qihe Xu who started this ball rolling with the EU grant. For those who have played a big role in the Association in the past we are sure roles will be found for them if these are wanted. We would especially like to thank Prof. Nicola Robinson who did not stand for re-election. As Secretary-General, she kept us all together in the last two years with the co-ordination of meetings as well as the taking and distribution of minutes.

Breaking News No. 4

Warmest congratulations to Prof. Rudi Bauer, the 1st President of the GP-TCM RA, for his appointment as Chairman of the EDQM (European Directorate for the Quality of Medicines) TCM Working Party! This unique position is of tremendous importance to catapult better EU-China collaboration on TCM.

European Pharmacopoeia Commission Secretariat

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RZ/PH/2016-05527L
CSS/bst

Strasbourg, 08/12/2016

Subject: Appointment to Working Party TCM

Dear Prof. Dr BAUER,

We are pleased to inform you that the European Pharmacopoeia Commission, at its 156th Session, has appointed you **Chair of Working Party TCM**. We are pleased to invite you to the next meeting of the Group to be held **from 31 January to 1 February 2017** in the premises of the EDQM in Strasbourg (see address below). You will receive the agenda in a separate letter.

All the documents issued to the Group can be consulted on our Extranet site, at the following address: https://connect.edqm.eu/.
You can access the electronic agenda of meetings (including links to documents) in the section My Agendas. You have received an automatic e-mail from the EDQM database giving you your login details to access to our extranet web site. Please consult the "General information for Experts", which contains documents of general information (left-hand box of the home page).

Please note that the European Pharmacopoeia budget specifies that each member state is responsible for paying the travel and accommodation expenses of its experts.

Please contact us if you require any further information.

Yours sincerely,

Ms Cristiana Sabatini-Samori
Scientific Officer

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Chengdu University of TCM, a GP-TCM Corporate Member, celebrated its 60th bithday. Many congratulations!
http://mp.weixin.qq.com/s?__biz=MzA3MTQzMDU1MA==&mid=2651048623&idx=1&sn=2b81fd086e47c658955ec2cd9c2f1a84&chksm=84dad256b3ad5b40f3d05a3dc7231c83dea1982fb7a91b884bcbc833507344edf785233cad89&mpshare=1&scene=5&srcid=1023a9CeJiCYTxis3gVSiVMC#rd

Looking Forward to the Future of the GP-TCM RA


Dr Tai-Ping Fan[1] and Dr Qihe Xu[2]
Co-Editors of the GP-TCM RA Newsletters
http://www.gp-tcm.org/news-list/

It has been a great privilege and honour to serve as your Co-Editors!

Building on close collaborations in the FP7 GP-TCM Project (2009-2012) and the GP-TCM RA Secretariat, Board of Directors and Executive Council (2012-2014), our collaboration in the past two years has particularly focused on co-editing the GP-TCM RA Newsletters.

Through the Newsletters, we have strived for disseminating the GP-TCM consensuses (*J Ethnopharmacol. 2012;*140*:455-644*), the GP-TCM RA 3Is principle (*BMC Complement Altern Med. 2013;13:132*), The Art and Science of TCM and Other Traditional Medicines (*Science* 2014;346 (6216 Suppl): S1-S25; *Science* 2015;347 (6219 Suppl):S26-51; *Science* 2015;350 (6262):S53-85), the latest developments in Europe and China, the state of the art of science, especially the ever-growing omics and systems biology, and its successful applications in TCM research.

We thank all Editorial Board Members for their invaluable contributions from their corners of the world, without which these Newsletters could not have been so colourful! We particularly wish to thank all authors of the editorials, which offers expert opinions and insightful views on various aspects of TCM. Space limiting, we will not name them all, but thank you very much indeed!

We thank all members and everyone who reads our Newsletters, without you this work would become worthless. We have been keen to hear from you so that we can serve you better. We set up the *Sounding Board* column for this purpose, but received just a few contributions, which are nonetheless highly appreciated. We know, in this regard, we need to do better and we look forward to a more interactive communication mechanism with you in the future.

Starting from the New Year, one of us (TPF) will become President and the other (QX) will re-join the BoD after two years' absence, and will have different job descriptions within the Association. Therefore, this issue of the GP-TCM RA Newsletter is the last issue that we have co-edited. However, you can have our words that we will continue to work closely together for a better future of the Association and for our members, who have trusted us in all these years!

It is our shared belief that links between the Association and its members must be further strengthened, the capability of the Association to serve its members better must be enhanced and the work of Interest Groups and focused collaborations must be more vigorously supported. We both feel optimistic that future communications between the Association and our members will only become better, taking advantages of new social media such as WeChat and WhatsApp, etc, for example.

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[2] Dr Qihe Xu, Co-Director, King's Centre for Integrative Chinese Medicine, Senior Lecturer in Renal Medicine, King's College London. E-mail: qihe.xu@kcl.ac.uk

Herbal-Drug Interactions[3]

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Use of herbal medicinal products (HMPs) with conventional medication has long been a common trend worldwide and consequently, the concurrent administration of these products and prescription drugs or over-the-counter medications may affect drug therapy and increase the risk for clinically observed adverse reactions. Use of herbal and complementary products has been reported to be very high in various parts of the earth and in some areas such as Africa or South America herbal preparations are the first-line treatment for a substantial portion of the population. They also have had a significant official status for a long time in many Asian countries, e.g. China and India, and their pharmaceutical status has been recognized relatively recently especially in the EU, Canada and Australia, among others. The potential for herb-drug interactions is heightened by the underlying perception that these products are not drugs, and therefore safe. Additionally, their use is reported to medical professionals only sporadically.

Guidelines for studying drug-drug interactions have been established by the FDA and the EMA. Earlier guidelines did not pay much attention to HMPs. The revised EMA guideline addresses herbal medicinal substances/preparations and specific food products in a very general manner. Because herbal medicinal substances/preparations have a different legal position in the USA, the FDA DDI guideline does not deal with them. The WHO has an ongoing project to develop herbal-drug interaction guidelines; the first meeting took place in Milan in 2009 and the second one was at University of Mississippi, Oxford, MS, USA, in July 2016. Although the report is still in a draft state, it is useful to present some ongoing topics of discussion.

HMPs are complex mixtures with a large number of components and sometimes highly variable and often partially unknown composition. Additionally, the composition of a defined preparation may vary as a function of harvesting time, geographical origin, mode of preparation etc. The complete composition is very cumbersome to unravel, so one can argue that there are always many unknown constituents and thus there may be" hidden" dangers. Additionally, there is a considerable variability in dose, strength and formulation, which makes it impossible to evaluate all of these products in animal and/or clinical models.

In the EMA, potential interactions, if appropriate investigations are available in the dossier, are assessed and included in assessment reports and monographs of herbal medicinal substances/preparations. The most important example thus far has been St. John's wort (*Hypericum perforatum*), which has been extensively investigated in a large number of *in vitro* and *in vivo* studies and also the mechanistic basis of interactions has been elucidated. For most herbals, investigations are either totally lacking or just sporadic, depending on the interests of investigators or on suspicions arising during the therapeutic use of an herbal preparation simultaneously with other drugs. It seems that there is even no consensus as to whether there is a general need to perform preclinical or clinical herbal-drug interaction studies.

[3] Writing of this editorial is based partly on a draft reflection paper by the author to the HMPC/EMA in 2010-2011.

The fact that HMPs are complex mixtures poses also considerable technical difficulties for the reliable assessment of potential interactions. For example, they contain often fluorescent or fluorogenic substances and many screening tests for interactions are based upon use of fluorogenic substrates. Consequently, reliable results are difficult or impossible to obtain with these test systems. There are also problems in liquid chromatography–based techniques because of numerous components of herbals and consequent numerous peaks in the chromatogram. Current LC-mass spectrometry techniques are in principle powerful for the elucidation of complex mixtures because their resolution and resistance to many interferences, but on the other hand they are very expensive and require highly specialized scientists for running appropriate studies.

Because HMPs are natural substances to which people may be exposed also via food and other sources, it may be difficult under some circumstances to differentiate between HMPs and botanical supplements or other food products. However, it seems clear that in such cases food and other ingested products deserve additional research in terms of interaction potential.

Based on the above reflections, it is obvious to present a number of questions regarding the assessment of herbal-drug interactions.

1. Is there a need to provide guidance to industry to study herbal-drug interactions either pre-clinically or clinically? Basically a need is justifiable if potential hazards of herbal-drug interactions are judged to be significant enough clinically, so that they are a threat to safe and effective therapy.

2. If there is a recognized need, are there technical and analytical means to accomplish such studies in a reliable manner?

3. If yes, are the identified analytical and technical approaches scientifically and commercially feasible for the task?

4. If all the aforementioned questions are answered in such a way that needs, means and costs are regarded acceptable for the purpose, who should lead the development of a specific guideline for the preclinical and clinical testing of potential interactions between HMPs and conventional drugs, for hazard identification and risk assessment of HMPs?

It seems that WHO or any international or national organization, agency or society faced with the challenges posed by potential herbal-drug interactions, is really having a difficult task in trying to develop recommendations to cope with the above-mentioned challenges. These challenges are not only scientific or technical, but also associated with more general and societal factors. One of the most important challenges is to raise awareness of potential harms among the stakeholders, health service providers and the general public, because only in this way it is possible to begin to tackle the aforementioned questions in a productive way. It has also to be stressed that the phenomenon of interactions has two opposite sides: currently more attention is paid to harmful consequences, but it has been shown in a few instances that the outcome of herb-herb or herb-drug interactions could be harnessed into useful purposes, such as enhancing the therapeutic action or attenuating a harmful outcome. Thus, scientific studies of herb-drug interactions may well lead to useful consequences in both avoiding harm and enhancing drug therapy.

About the author: Olavi Pelkonen has MD (1973) and PhD degrees (1973). He was a post-doctoral fellow at the National Institutes of Health, Bethesda, Maryland (1976-1977) and in 1978-2010 he had been Associate and Full Professor of Pharmacology as well as Head of the Department in University of Oulu, Finland. He has been a visiting professor in Spain, UK and Australia. He has been participating, also as a working group leader, in EU COST Actions and in Framework Programme consortia (e.g. coordinator of the project EUROCYP 1996-2000). He has >300 original and review articles, mainly on various aspects of drug and carcinogen metabolism, especially by cytochrome P450 enzymes, and its regulation by genetic and environmental factors and he is a 'Highly Cited Researcher in pharmacology and toxicology' (ISI-Thomson). His current interests include the development of in vitro and in silico methods for drug development and chemical risk assessment, including also environmental risks. He has (had) expert roles at ECVAM, EFSA, EMA, WHO and DG

SANCO. He has been member/rapporteur/chair in several evaluation and/or advisory groups for research assessment exercises (Finland, Estonia, Romania, Hong Kong, Australia) and in search committees for scientific directors (Finland, Sweden, Australia, Czech Republic). In 2003, he gave The Oswald Schmiedeberg Lecture at the University of Tartu. In 2007, he was awarded The Bo Holmstedt Memorial Lecture Award by EUROTOX. In 2010, he was a plenary lecturer in IUPHAR WorldPharma2010 Congress in Copenhagen. In 2014, he was awarded the Nordic Prize of Basic and Clinical Pharmacology and Toxicology. He has got several national awards for achievements in research, teaching and scientific education. Since retirement, he has continued his research work at national and EU level and in expert tasks and duties, especially in connection with EU and international agencies.

European Reports

New 1. **Europe's drug regulator opens vaults of clinical-trials data.** EMA becomes first major drugs agency to publish clinical-study reports online. http://www.nature.com/news/europe-s-drug-regulator-opens-vaults-of-clinical-trials-data-1.20855?WT.ec_id

New 2. Maxton J. **European Union: Royal Society helps guide Brexit science.** *Nature* 2016;536: 274. http://www.nature.com/nature/journal/v536/n7616/full/536274a.html?WT.ec_id

New 3. Ramakrishnan V. **Policy: UK research reforms in a Brexit world.** *Nature* 2016;538: 459. Venki Ramakrishnan, president of the Royal Society, wrote: "I think that improving and streamlining the highly productive UK research enterprise becomes more important as we enter a post-Brexit world. Funding from UK Research and Innovation (UKRI) will boost cooperation among the research councils; allow a more flexible, interdisciplinary approach to global challenges; and position research at the heart of a new industrial strategy. Including the funder Innovate UK will strengthen links between the innovation and research communities, provided that its unique business-facing focus and customer connections are not put at risk. Such long-term benefits, championed by the UKRI's interim chair, John Kingman, justify the transition — with the provisos that it safeguards the best in our current research system, retains operational autonomy of research councils and attracts top scientists to lead them. Including these leaders on an executive committee that is responsible for key decisions will ensure a collegial environment and smoother functioning. Evaluation in areas such as the teaching and research interface and the assessment frameworks will need particularly careful scrutiny, and consultation with the research community must be legally guaranteed before major research-council reform. The government's White Paper on research reforms refers to "the primacy of scientific and academic decision-making" (see go.nature.com/2ekbtx2). It commits to investing in excellent research and legally underpinning balanced funding. These safeguards are not compatible with alleged intentions to reduce British research independence. Moreover, the value of the research endeavour itself provides greater security than any royal charter."
http://www.nature.com/nature/journal/v538/n7626/full/538459a.html?WT.ec_id

New 4. **Science Europe has published a survey report 'Open Access publishing policies in Science Europe Member Organisations'.** The report shares key results from two surveys conducted by Science Europe and Global Research Council and includes a table outlining the state of play of Science Europe member organisation's open access policies in 2016.
http://www.scienceeurope.org/wp-content/uploads/2016/10/SE_OpenAccess_SurveyReport.pdf

New 5. **Europe: Call to keep funding.** This article was originally published in the journal *Nature*. A group of leading European research universities is calling on the European Commission to restore funds cut from the €80-billion (US$88-billion), 7-year pan-European research funding scheme Horizon 2020. The 21-member League of European Research Universities (LERU) says in LERU's Interim Evaluation of Horizon 2020 that the diversion of billions to support risky research has resulted in less funding and lower application success rates. The low success rates will dissuade talented researchers from applying for Horizon research grants in future, the report authors warn. LERU calls for the commission to increase grant-scheme budgets, and warns that the commission focuses too much on technical innovation and 'cutting-edge' research. The authors also suggest that the

commission should repeat popular funding calls to offer more chances to apply for grants and provide extra funding to support maternity and leave options at universities. They also call for the creation of large, broad panels to evaluate collaborative proposals more effectively.
http://www.nature.com/naturejobs/science/articles/10.1038/nj7628-321a?WT.ec_id

New 6. Gibney E. **UK scientists excited by surprise £2-billion government windfall.** *Nature* 2016;**540:**16-17. British scientists are not used to hearing about large increases in national research spending. So when Prime Minister Theresa May promised on 21 November that her government would invest an extra £2 billion (US$2.5 billion) per year in research and development (R&D) by 2020, scientists gave the speech a cautious welcome.
http://www.nature.com/news/uk-scientists-excited-by-surprise-2-billion-government-windfall-1.21038?WT.ec_id

China and EU-China Cooperation Reports

New 1. Richard Horton. **Offline: A barometer for trust in China.** *Lancet* 2016;388:2222. The Chinese Academy of Medical Sciences celebrated its 60th anniversary last week. 60 is commonly symbolised by a diamond. The word diamond (Greek, adamas) means “unbreakable” and “unconquerable”. Fitting. Because thanks to the organisation of health care in China, the Chinese public has been the beneficiary of some remarkable successes. Indeed, “health” has increasingly been emphasised in government manifestos since 1954, according to research presented at the second Lancet–Chinese Academy of Medical Sciences Health Summit held in Beijing this week. In just one decade (2005–15), life expectancy for women rose from 75 to 80 years (for men, from 69 to 73 years). The Global Burden of Disease Study 2015 recently reported that in 1990 there were 29 922 maternal deaths in China. By 2015—within a single generation—that figure had fallen to 2948, a 90% reduction in preventable mortality. This progress is astonishing by any standards… http://dx.doi.org/10.1016/S0140-6736(16)32110-9

New 2. Tucker JD, et al. **Rebuilding patient–physician trust in China.** *Lancet* 2016; 388:755.
http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31362-9/fulltext?elsca1=etoc

New 3. Liu Y, et al. **Expectations of students of traditional Chinese medicine.** *Lancet* 2016;388:756.
http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31363-0/fulltext?elsca1=etoc

New 4. The Lancet. **The best science for achieving Healthy China 2030.** *Lancet 2016;* 388:1851. An Editorial discusses China's health-care reforms and highlights evidence-based solutions: “2016 marks a major milestone in the history of China's health-care reform. Health has been made an explicit national political priority. In August, the Healthy China 2030 plan was officially approved by China's Central Committee, and President Xi Jinping called for putting health at the heart of the country's entire policy making endeavour to ensure the health of the Chinese population. In President Jinping's remarks at the national meeting on health, crucial health issues such as environmental health and meeting the challenges of an ageing society were all addressed. Health-care reform was also acknowledged to be approaching a very difficult stage with tremendous challenges. But when I look through a file of press cuttings I keep on China, I can’t fully dispel some anxiety.…” http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31842-6/fulltext

New 5. Zhao Y, Zhang S, Li W, Chen L. **Pursuing excellence in graduate medical education in China.** *Lancet 2016;* 388:1859-60. “Unquestionably, one of China's primary challenges in health-care reform is improving the quality of clinical services.1 Patients who seek quality of care bypass poorly staffed primary care facilities for long waits in congested hospitals. Unsatisfactory quality of care is a major source of conflict between patients and doctors. Health inequity in China is due less to a shortage of health-care workers and more to abundant yet poorly educated service providers, especially in rural areas. That is why seven Chinese Government ministries in 2013 jointly launched the Standardized Residency Training (SRT) programme, which consists of 3 years of residency training after 5 years of medical school…” http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31841-4/fulltext

New 6. Xu D, Cheng F, Chen Y, Hao Y, Wasserheit J, for China University Global Health Writing Group. **Harnessing China's universities for global health.** *Lancet 2016;* 388:1860-62. “In 1963, China's medical teams became its signature programme for international health outreach work. 15 years later, the so-called barefoot doctor approach for training locals in basic medical care inspired the global primary health care initiative at Alma-Ata. Since 2015, China has launched a series of international programmes: the Cape Town Declaration; a new global development fund with an initial US$2 billion; and the “six 100s” initiative, which aims to make available 100 programmes for poverty reduction, agricultural cooperation, trade promotion, and environment protection in addition to 100 new hospitals and clinics and 100 schools and vocational projects…”
http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31839-6/fulltext

New 7. Xu B, Yang J, Zhang Y, Gong P. **Healthy cities in China: a *Lancet* Commission**. *Lancet* 2016; 388:1863-64.The year 2016 marks the 30th anniversary of the concept of healthy cities, which has been promoted by WHO since 1986. The movement started in Europe as a way to put health high on the political, social, and economic agendas of cities. It represents a mindset shift from a health-care system centred on disease treatment to one that combines treatment, prevention, promotion of health policy, and a transferral of responsibility from health professionals to the entire society, with an emphasis on the role of local governments...
http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31724-X/fulltext

New 8. **Sichuan University:** For 120 years, Sichuan University has strived for excellence in research and education. One of China’s oldest universities, today Sichuan University is a major driver of socioeconomic development in western China. Reflecting on its progress in the natural sciences, engineering, medicine, humanities and social sciences, the university now begins a new journey on its path to becoming a world-renowned research organisation.
http://www.nature.com/nature/supplements/collections/npgpublications/sichuan/?spMailingID

New 9. The Lancet. **Ageing in China: a ticking bomb.** Filial piety is a key virtue in Chinese culture and was considered the bedrock of the social care and health system to protect and support elderly people in China. However, the rigid family structure for elderly care in China is gradually collapsing as a result of massive urbanisation, rapid economic growth, a decreased fertility rate, and smaller family sizes. Meanwhile, China is one of the fastest ageing countries and has more people aged 65 years and older than any other country in the world, and in 2050 the proportion of older persons within the total national population is projected to be around 25%.

The health needs of older people in China challenge the country's health and social care system seriously—and unprecedentedly. According to the China Health of Retirement Longitudinal Study 2015 report released on Oct 19, a third of Chinese people aged 60 years or older have severe depression, and the prevalence of hypertension and diabetes is 53·6% and 23·9%, respectively, in this population. Furthermore, 500,000 elderly people go missing in China per year, around 25% of them being diagnosed with Alzheimer's or dementia, and 72% suffering memory impairment.
http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)32058-X/abstract

New 10. Jinnan Wang, et al. **Protecting China's soil by law.** *Science* 2016;354:562. After severe problems with air and water pollution, China is getting serious about its soil. On 31 May, China's State Council released an action plan for soil pollution prevention and remediation, aiming to make 90% of polluted, arable land safe for human use by 2020 and increase this to 95% by 2030…
http://science.sciencemag.org/content/354/6312/562.2?utm_campaign

New 11. **Chinese Academy of Medical Sciences and Peking Union Medical College: Leading innovation in the health sciences: “**Peking Union Medical College (PUMC) and the Chinese Academy of Medical Sciences (CAMS) share a history of firsts. PUMC was the first medical university in China authorized to grant M.D. degrees to students who have finished an eight-year curriculum that starts in undergraduate school. CAMS, its sister institution, is a leading multidisciplinary medical research institution that, among its many accomplishments, developed the new antitumor drug icotinib. CAMS and PUMC run 19 institutes, 7 satellite centers, 6 hospitals, and 7 schools. The pair

are now seeking another series of firsts—to make PUMC an international research-based medical university and to transform CAMS into the "Chinese National Institutes of Health," giving it international standing. Despite the many dramatic changes in China since their founding, PUMC and CAMS have remained true to their mission and heritage as elite medical and research institutions. No doubt many more firsts remain in their collective future."
http://science.sciencemag.org/content/354/6314/913.2?utm_campaign

New 12. Xiao RP, et al. **Making An Impact on Clinical Practice and Research in China.** *New Engl J Med* November 21, 2016. DOI: 10.1056/NEJMe1614121
Two weeks ago, NEJM Group launched a collaboration with Jiahui Medical Research and Education (JMRE) of Shanghai: NEJM 医学前沿 (Yi Xue Qian Yan), or NEJM Frontiers in Medicine. This online medical resource, now available at www.nejmqianyan.cn and by mobile app, provides an archive of key *New England Journal of Medicine* and *NEJM Journal Watch* articles fully translated into Chinese, with new articles being added each week. Many of the new *Journal* articles will appear with original commentary from China-based experts……

At launch, NEJM医学前沿 contains over 150 *Journal* articles and over 100 articles from *NEJM Journal Watch* published within the past 5 years, with a focus on cancer, cardiovascular disease, and diabetes, together with about 20 commentaries by Chinese physician–scientists. NEJM医学前沿 now begins weekly publication of new articles from the *Journal* and from *NEJM Journal Watch*, translated into Chinese and focusing on these three major areas, with the intention of gradually broadening its focus to cover a wider range of medical conditions. Each week, the *Journal*'s entire table of contents will be translated, with links to the full articles at NEJM.org. A simple, secure, and no-cost registration is needed for access to NEJM医学前沿. Links to translated *Journal* articles at NEJMqianyan.cn will also be provided at NEJM.org. We believe that Chinese health professionals will find the content useful as we pursue our common goal: to improve the health of people everywhere through reliable medical information.

两周前，美国NEJM集团与中国上海的嘉会医学研究与教育集团JMRE携手启动了一项战略合作项目——《NEJM医学前沿》。这一线上医学资源由《NEJM医学前沿》官网（www.nejmqianyan.cn）和移动客户端组成。该项目汇集了发表于《新英格兰医学杂志》（NEJM）和《新英格兰医学杂志期刊荟萃》（NEJM Journal Watch）的一批重量级论文的中文翻译，今后每周将与《新英格兰医学杂志》几乎同步发布重要文章的译文；同时，部分译文附有由中国专家原创的相关述评……《NEJM医学前沿》创刊号中收录了近五年来发表的众多精品论文的译文，其中150余篇选自NEJM，100余篇选自《NEJM期刊荟萃》。论文题材偏重于癌症、心脑血管疾病和糖尿病，其中近20篇文章附有由中国医生科学家撰写的述评。
《NEJM医学前沿》计划每周翻译和出版发表于《新英格兰医学杂志》和《新英格兰医学杂志期刊荟萃》的新内容。我们的选题着重于上述三大疾病领域，今后会逐渐扩展到更为广泛的医学范畴。《NEJM医学前沿》还全文翻译NEJM每周的目录，并提供目录的NEJM官网链接。读者完成方便而安全的注册后，即可免费获取《NEJM医学前沿》的内容，还可以通过NEJM官网获取《NEJM医学前沿》上的所有译文链接。
http://www.nejm.org/doi/full/10.1056/NEJMe1614121?query=TOC

New 13. *Lancet* Editorial: **Reversing the rising tide of diabetes in China.** *Lancet* 2016;388:2566.
The prevalence of diabetes (including both type 1 and type 2 diabetes) in China has increased significantly from 0·9% in 1980 to 11·6% in 2010, and China now has the largest number of people with diabetes in the world. According to the latest figures from the National Health and Family Planning Commission released on Nov 12, the total number of people with diabetes in China has reached 100 million and will keep growing. Awareness, treatment, and control of diabetes remain poor, making it one of the diseases with the highest death rates in the whole country. Why is it so hard to curb the epidemic of diabetes in China?...
http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)32384-4/fulltext?elsca1=etoc

Omics in Progress

1. **Epigenetics: CRISPR edits gene methylation:** The CRISPR gene-editing tool has been modified so that it can add or remove methyl groups at specific positions on DNA, allowing researchers to test how such changes affect gene expression. DNA methylation helps to regulate gene expression, but its role at specific sites has been difficult to determine. Rudolf Jaenisch and his colleagues at the Whitehead Institute for Biomedical Research in Cambridge, Massachusetts, altered the Cas9 enzyme — which can be programmed to bind to and cut specific regions of DNA — so that it would bind to DNA without cutting it. The team then fused the disabled Cas9 to enzymes that either add or remove methyl groups. The authors found that removing methyl groups from two specific regions induced the expression of certain genes. The approach worked both in cultured mouse cells and in live mice.
http://www.nature.com/nature/journal/v537/n7622/full/537588c.html?WT.ec_id
http://www.sciencedirect.com/science/article/pii/S0092867416311539

2. Jon Cohen. **Mice made easy**. *Science* 2016; 354:538-542. "CRISPR works best at "knocking out" genes, introducing errors that cripple the ability of cells to make functional products from the DNA. When it comes to adding, or knocking in, information—which is critical for many mouse studies—CRISPR remains a work in progress,…"
http://science.sciencemag.org/content/354/6312/538?utm_campaign

3. Jon Cohen. **A reporter does CRISPR**. *Science* 2016; 354:541. The details of CRISPR, the new genome-editing tool, baffled Science magazine reporter Jon Cohen so he decided to run his own experiment with the help of scientist Roland Wagner at the Sanford Burnham Prebys Medical Discovery Institute in San Diego, California. Cohen had heard that "any idiot" could do CRISPR, so his experiment tests this hypothesis. As he hoped, conducting a CRISPR experiment with his own hands clarified how it actually works and what the challenges are to properly carrying out the cutting of DNA. But to find out whether any idiot can do it, read the story.
http://science.sciencemag.org/content/354/6312/541?utm_campaign

4. Yang Li, et al. **A Functional Genomics Approach to Understand Variation in Cytokine Production in Humans.** *Cell* 2016; 167:1099-1110. As part of the Human Functional Genomics Project, which aims to understand the factors that determine the variability of immune responses, we investigated genetic variants affecting cytokine production in response to ex vivo stimulation in two independent cohorts of 500 and 200 healthy individuals. We demonstrate a strong impact of genetic heritability on cytokine production capacity after challenge with bacterial, fungal, viral, and non-microbial stimuli. In addition to 17 novel genome-wide significant cytokine QTLs (cQTLs), our study provides a comprehensive picture of the genetic variants that influence six different cytokines in whole blood, blood mononuclear cells, and macrophages. Important biological pathways that contain cytokine QTLs map to pattern recognition receptors (TLR1-6-10 cluster), cytokine and complement inhibitors, and the kallikrein system. The cytokine QTLs show enrichment for monocyte-specific enhancers, are more often located in regions under positive selection, and are significantly enriched among SNPs associated with infections and immune-mediated diseases.
http://www.cell.com/cell/fulltext/S0092-8674(16)31400-3

5. Jenna L. Pappalardo, David A. Hafler. **The Human Functional Genomics Project: Understanding Generation of Diversity.** Generation of biologic diversity is a cornerstone of immunity, yet the tools to investigate the causal influence of genetic and environmental factors have been greatly limited. Studies from the Human Functional Genomics Project, presented in *Cell* and other Cell Press journals, integrate environmental and genetic factors with the direction and magnitude of immune responses to decipher inflammatory disease pathogenesis.
http://www.cell.com/cell/fulltext/S0092-8674(16)31461-1?elsca1

New 6. **Insights from the International Human Epigenome Consortium:**

Read this one-of-a-kind, open access collection of epigenomic datasets and analyses from researchers around the globe, now published in Cell and other Cell Press journals.
http://www.cell.com/consortium/ihec

New 7. **The International Human Epigenome Consortium: A Blueprint for Scientific Collaboration and Discovery:** http://www.cell.com/cell/fulltext/S0092-8674(16)31528-8

New 8. **SnapShot: Epigenetic assays:** http://www.cell.com/cell/fulltext/S0092-8674(16)31536-7?elsca1

New 9. The *Cell* Editorial Team. **Cornucopia of Advances in Human Epigenomics.** http://www.cell.com/cell/fulltext/S0092-8674(16)31522-7?elsc1

New 10. A *Nature* Collection on **3D Genome**: The 3D configurations of the genome and the nucleus are complex, dynamic and crucial for the proper control of gene expression and physiology. In the past few years, technological advances in the investigation of higher-order chromatin structure and function — pioneered by chromosome conformation capture methods and by improved microscopy techniques — revealed how the organization of the genome is interconnected with nuclear architecture and can vary between cell types and during cell differentiation and development. Not surprisingly, mutations that alter nuclear architecture cause many human conditions and diseases, which have shed light on the molecular mechanisms that underlie the connections between nuclear organization and physiology.

This collection includes recent Reviews, Research articles and Protocols from across the *Nature* group of journals — it showcases both the latest advances in the methodologies used to study genome organization and our emerging understanding of how genome organization and nuclear architecture regulate gene expression, cell fate and cell function in physiology and disease. http://www.nature.com/collections/rsxlmsyslk?WT.ec_id

New 11. Fessenden M. **Metabolomics: Small molecules, single cells.** *Nature* 1016;**540**:153-155.

Sensitive mass spectrometry and innovative cell-sampling techniques allow researchers to profile metabolites in single cells, …
http://www.nature.com/nature/journal/v540/n7631/full/540153a.html?WT.ec_id

New 12. Suzui K, et al. ***In vivo* genome editing via CRISPR/Cas9 mediated homology-independent targeted integration.** *Nature* 1016;**540**:144-149. Targeted genome editing via engineered nucleases is an exciting area of biomedical research and holds potential for clinical applications. Despite rapid advances in the field, in vivo targeted transgene integration is still infeasible because current tools are inefficient1, especially for non-dividing cells, which compose most adult tissues. This poses a barrier for uncovering fundamental biological principles and developing treatments for a broad range of genetic disorders2. Based on clustered regularly interspaced short palindromic repeat/Cas9 (CRISPR/Cas9)3, 4 technology, here we devise a homology-independent targeted integration (HITI) strategy, which allows for robust DNA knock-in in both dividing and non-dividing cells in vitro and, more importantly, in vivo (for example, in neurons of postnatal mammals). As a proof of concept of its therapeutic potential, we demonstrate the efficacy of HITI in improving visual function using a rat model of the retinal degeneration condition retinitis pigmentosa. The HITI method presented here establishes new avenues for basic research and targeted gene therapies.
http://www.nature.com/nature/journal/v540/n7631/full/nature20565.html?WT.ec_id

Other Recommended Readings

1. **Zhongzhen Show on Materia Medica《中振說本草》**：為迎接李時珍誕辰 500 周年，趙中振教授主持了《中振說本草》系列講座。趙教授以《本草綱目》為起點，通過生動的語言、活潑的畫面：講醫藥、論文化、說歷史、詠山河、談民俗。讓我們與趙教授一同踏上《本草綱目》之旅，共同感受中醫藥寶庫的博大精深，領悟中醫藥在維護人類健康中的智慧，活用這部日常生活的實用寶典。To earmark the 500th anniversary of the birth of LI Shizhen, author of the CMM masterpiece "Compendium of Materia Medica", Professor Zhao Zhongzhen, Associate Dean and Chair Professor of The School of Chinese Medicine (SCM) of Hong Kong Baptist University (HKBU) produced a hugely popular talk series, which can be freely accessed at the HKBU website: http://scm.hkbu.edu.hk/tc/exchange_and_collaboration/compendium/shuobencao.php

2. **"The Changing Face of Clinical Trials", a *New England Journal of Medicine* Collection.** http://www.nejm.org/page/clinical-trials-series?emp

3. Baker M. **Reproducibility: Seek out stronger science.** *Nature* 2016; 537: 703-4. Want to learn how to design an experiment or analyse data? Training is there if you look. http://www.nature.com/naturejobs/science/articles/10.1038/nj7622-703a?WT.ec_id

4. Watts G. **Winnie Yip: tracking health policy and economics in China.** *Lancet* 2016; 388:1871. Although not born into an academic family—her father was a Hong Kong businessman—it didn't take Winnie Yip long to discover the rewards of learning. And at the best institutions. A degree in economics from the University of California, Berkeley, was followed, in 1994, by a PhD at the Massachusetts Institute of Technology. Then it was research at Harvard and Oxford and now Harvard again—this time as its newly appointed Professor of the Practice of International Health Policy and Economics. The reward she's acquired over this time is an international reputation in both these topics…http://www.thelancet.com/journals/lancet/article/PIIS0140-6736(16)31811-6/abstract

5. **A WeChat report on ISO standards related to TCM: 7 Finalised, 47 in progress.** http://mp.weixin.qq.com/s?__biz=MzAwMTk5NDY2Nw==&mid=2247483767&idx=1&sn=400d1fd6b36b078ed817ee97194addb5&mpshare=1&scene=5&srcid=0803gen7yrwKIJDOkzmRh4j8#rd

6. **A WeChat report on WFCMS call for WFCMS、ISO/TC249 standard proposals:** http://mp.weixin.qq.com/s?__biz=MzAwMTk5NDY2Nw==&mid=2247483840&idx=1&sn=b8d36dc64b22fb13b0fe042fbd211db7&chksm=9ad07b04ada7f2128c357b1e067e6654ff01e45d8989d662bd51227a215b042f768b15913397&mpshare=1&scene=5&srcid=1108BXq4VhJZ9DV6olKxzXBF#rd (中文)

7. **A WeChat report on A recent *Nature Chemistry* review (Rodrigues I, et al. Counting on natural products for drug design *Nature Chemistry* 2016;8:531–541)** 《自然化学》综述：从天然产物到药物设计

http://mp.weixin.qq.com/s?__biz=MzAwOTExNzg4Nw==&mid=2657565281&idx=3&sn=87ebdfdf3fb6ebe60cbb0d956ace36a0&chksm=80f713b1b7809aa7f15485d60cfa014cd0775769b1b6549249ced6345e2bcc57517ba86004a5&mpshare=1&scene=5&srcid=1112fLHqvmOZzYScL1ALwblN#rd (中文)

The paper can be found here: http://www.nature.com/nchem/journal/v8/n6/full/nchem.2479.html

Abstract: Natural products and their molecular frameworks have a long tradition as valuable starting points for medicinal chemistry and drug discovery. Recently, there has been a revitalization of interest in the inclusion of these chemotypes in compound collections for screening and achieving selective target modulation. Here we discuss natural-product-inspired drug discovery with a focus on recent advances in the design of synthetically tractable small molecules that mimic nature's chemistry. We highlight the potential of innovative computational tools in processing structurally complex natural

products to predict their macromolecular targets and attempt to forecast the role that natural-product-derived fragments and fragment-like natural products will play in next-generation drug discovery.

The article listed the following databases, which might be of interest to GP-TCM RA members.

- Dictionary of Natural Products http://dnp.chemnetbase.com
- Traditional Chinese Medicine http://tcm.cmu.edu.tw
- SuperNatural http://bioinformatics.charite.de/supernatural/
- ChEMBL http://www.ebi.ac.uk/chembl/
- MarinLit http://pubs.rsc.org/marinlit/

Acupuncture Research

New 1. Leung SB, et al. **Attenuation of blood pressure in spontaneously hypertensive rats by acupuncture was associated with reduction oxidative stress and improvement from endothelial dysfunction.** Chinese Medicine 2016;11:38
https://cmjournal.biomedcentral.com/articles/10.1186/s13020-016-0110-0

New 2. Li M, et al. **Repetitive electroacupuncture attenuates cold-induced hypertension through enkephalin in the rostral ventral lateral medulla.** Sci Rep. 2016 Oct 24;6:35791.
http://www.nature.com/articles/srep35791

Meeting Reports

New 1. **WeChat report on the successful opening of the 5th International Conference on Modernisation of TCM in Chengdu, on 23rd October 2016.** 国际中医药大会在川开幕，全球 20 多个国家和地区代表为它而来. The theme of the conference, which attracted hundreds of delegates from more than 20 countries, was "TCM S&T Innovation and Big Health Industry".
http://mp.weixin.qq.com/s?__biz=MjM5NDQ5NzUwOQ==&mid=2651012522&idx=2&sn=d785a5c304a4c09c688ec850f5a852da&chksm=bd714b208a06c2368fc16b68b781bfa8e1488198a295cc8c47ea7c61413ae61a3bc4214daa70&mpshare=1&scene=2&srcid=1025t36bFPR1HqaQBVxNaNhZ&from=timeline&isappinstalled=0#wechat_redirect （中文）

New 2. **WeChat report on the success of 2016 Shanghai TCM and Natural Medicine International Conference 19-21 October 2016.** 2016 上海中医药与天然药物国际大会成功举办. With GP-TCM RA as a sponsor, the meeting attracted more than 400 attendees from tens of countries.
http://mp.weixin.qq.com/s?__biz=MzAxOTQyNTI0Mw==&mid=2657747344&idx=1&sn=fba5336545cc0bf9bd8f06bd484ca2bd&chksm=80599324b72e1a324ab079b81700e1b9c5d9908749abd18d1b8899178f114b88b815d7a22775&mpshare=1&scene=5&srcid=1103clfA3YEJ4uiATzub6fGk#rd （中文）

New 3. **WeChat report on the successful opening of the 13th World Congress of TCM and the "Road and Belt" TCM Culture Week held in Oakland, New Zealand 19-21 October 2016.** 第十三届世界中医药大会暨"一带一路"中医药文化周在新西兰奥克兰召开

https://a.meipian.cn/8unbyu0?from=timeline&isappinstalled=0（中文）

http://mp.weixin.qq.com/s?__biz=MzA3MDM5NTkyOA==&mid=2657148236&idx=1&sn=b29a932eaafc4f1e6567784a464270df&chksm=84a90c3bb3de852d21b6e8984576d7f01baa3cc0aba0ce56790102ae5a81f8dcb86d61193e19&mpshare=1&scene=1&srcid=1112GToBSDMAxKPxZprXzzvj&from=groupmessage&isappinstalled=0#wechat_redirect （中文）

Invitation from Journals

1. **Invitation from *World Journal of Traditional Chinese Medicine* (WJTCM).** **WJTCM**, ISSN 2311-8571, a new peer-reviewed journal (quarterly) launched in 2014, is the official journal of the World Federation of Chinese Medicine Societies (WFCMS) and the GP-TCM RA. **Aim & Scope:** Introduce clinical efficacy and mechanism of TCM to doctors and biomedical researchers around the world, so as to provide new ideas and methods for solving the complicated and difficult cases.

- WJTCM includes reviews and original articles focused on four aspects:
- Modern Research on Chinese Materia Medica: theories of processing, property, and compatibility of Chinese materia medica; safety of Chinese materia medica; active principles and mechanism and efficacy of crude drugs and Chinese compound formulas
- Research on TCM Theory: scientific connotation and biological foundation of TCM basic theories
- TCM clinical Research: disease and syndrome, TCM safety, efficacy evaluation, evidence-based and systematic evaluation
- Acupuncture and Moxibustion: effect mechanism of acupuncture and moxibustion, specificity of acupoint effect, acupoints compatibility, efficacy evaluation of acupuncture and moxibustion.

Submission to the Journal: All the articles can be submitted via ScholarOne: https://mc03.manuscriptcentral.com/wjtcm, Detailed information about requirements of manuscript and format can be found in "Instruction&Forms" by the above URL, or by accessing WJTCM home page www.wjtcm.org. All WJTCM articles will be published online via WJTCM website (www.wjtcm.org). PDF articles and electronic/online versions are freely available to global readers.

WJTCM has successfully published 7 issues since 2015. Full-text PDF articles and electronic/online versions are freely available to global readers: www.wjtcm.org The latest issue, i.e. the third issue of 2016 can be found here: http://www.wjtcm.org:8080/ch/index.aspx

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