

Cuisine and health: a new initiative for science and technology 'The Zhejiang Report' from Hangzhou

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There has been a rapid and remarkable recovery in Hangzhou, Zhejiang Province, China, during the 1990s, of a distinctive cuisine whose origins can be traced back to, at least, the building of the Grand Canal between Beijing and Hangzhou in the 600s AD and the stimulus to trade and migration, that was provided. This, along with exceptional health indices in the region, provides a basis for a new integrative study of the food chain, food culture and food science in regard to the human condition, which would be manifest by the degree of environmental sustainability, economic progress, social cohesion, health status, well-being and happiness that these dimensions of "food for humans" should support. Collectively, these have rarely been subject to systematic scholarly pursuit. Through the endeavours of the Zhejiang Association for Science and Technology, representing some 150000 professionals and the international community, represented principally by the International Union of Nutritional Sciences (IUNS) and its partners in WHO, the FAO Network of Excellence and the Hangzhou University of Commerce, this field has been brought together through the papers in this issue of Asia Pacific Journal of Clinical Nutrition. The report builds on related endeavours in recent times, notably "The Okinawan Roundtable on Nutrition and Cardiovascular Disease" which recognizes the exceptional and distinguishing features of the Okinawan diet in health protection, and the assessment of the place of fatty fruits, like red palm fruit amongst "North and West African Foods".

Key Words: Cuisine, Food, Economic Development, Health, Eco-Nutrition, Hangzhou, Zhejiang Province, China, Science, Technology, Trade, Transport, Migration, Social Cohesion, Locality, Region

"Cuisine and Health" is a concept now explored by a growing cohort of nutrition and health scientists.¹ The Okinawan diet^{1,2} and red palm fruit based diets³ are recent examples of such exploration. The recovery and re-discovery of Hangzhou cuisine in Zhejiang province and its health relationships provides an opportunity to examine in more detail the validity of this concept.⁴ More unifying concepts of the ecological basis of disease further encourage this enquiry.⁵

Hangzhou and Zhejiang Province, China

Zhejiang is one of China's most prosperous and densely populated provinces.⁶ To the north of the province the land is fairly flat featuring a number of rivers and canals and to the south the terrain is mountainous. The climate and geographical position of this province suit the cultivation of rice and tea and, its proximity to the sea and dense network of waterways supports an extensive fishing industry.⁷ Hangzhou, the capital of Zhejiang Province, is situated 180 kilometres southwest of Shanghai (see Figure 1) on the Qiantang River in the Yangtze Delta area. It is also the southern end of the Grand Canal of China, the largest man-made canal in the world.

Hangzhou's history dates back to the beginning of the Qin dynasty (221 BC). During the 10th century it was the capital of the Wu and Yue kingdoms of the Five dynasties. It thrived in the 12th and 13th century under the Southern Sung dynasty and in 1861 it was almost destroyed by the Taiping rebellion. In 1909, the Shanghai-Hangzhou-Ningbo railway opened, a development that

helped to rebuild Hangzhou as a successful commercial and trading centre. Other set-backs include its occupation by the Japanese from 1937 to 1945 and the Cultural Revolution from 1966 to 1976. Today, Hangzhou is a bustling city in a progressive province that is significant in terms of economic development, scholarship, art and culture.

Food and cuisine

Eating in Hangzhou and Zhejiang province exemplifies the integrative capacity of food to be in itself 'symphonic', a composite array of food colour, form, taste and texture, according to recipes rooted in tradition, stories and mythology, often accompanied by music, discourse and, always, a family, or social experience. A complex network of economic activity, learning and creativity surrounds and supports such eating patterns. It is no surprise that the 'restaurant' seems to have first emerged in Hangzhou.^{8,9}

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Figure 1. Map of China

Health patterns: favourable and unfavourable

The ways of eating, preparing, transporting and growing food may themselves have health implications beyond the food or food components themselves. The effects may be favourable or unfavourable. As it turns out, life expectancy is relatively long in Hangzhou compared with elsewhere in China, although problems like haemorrhagic stroke and respiratory illness persist, which will have some nutritional antecedents, perhaps in peculiar human genetic or environmental conditions.^{1,8}

Transportability and dynamic of cuisine: risks and benefits

Curiously, some Chinese cuisines like Cantonese and Szechuan have travelled more successfully than has Hangzhou cuisine. This might be a reflection of the insistence on local ingredients (and that they have not been fully commercialized) or that migration from Hangzhou has been less than from, say, Guangzhou (Canton) and with it the food culture, or that it was not sufficiently wide in its appeal, or other yet to be determined factors. However, Hangzhou cuisine is now becoming more fashionable within China (especially for Shanghainese), if not beyond China. This may present opportunities for the local economy; or threats to the local food culture, depending on view points and trends.⁸

Environmental sustainability, eco-nutrition and cuisine

Cuisine is dependent not only on the broader culture of the community and its culinary skills and interests, but also on the availability, diversity and quality of ingredients.^{7,8} For these reasons, a sustainable and diversified food supply is crucial.¹⁰ Even where these ingredients may be sourced at a distance, through trade, ecological considerations apply at the source and in relation to the routes and methods of transport.^{11,12} In Hangzhou various topographies - lake, estuarine, farmlands, hills and mountains - are available at close range. Rapid increases in urbanization are, nevertheless,

encroaching on previously exceptional fields, tea plantations and waterways. Considerable efforts are now being made and will be required to maintain environmental integrity in these circumstances.

Economic progress and cuisine

It has been a general observation that economic development can support cuisine.¹³ This may be the case, once basic food needs are met, insofar as more time, effort and resources can go into the cultivation, preparation, presentation and enjoyment of foods. However, fiscal resources without time, inclination and skill, may encourage food abundance and over-consumption without care, quality and satisfaction - the "fast-food" phenomenon.

The advent of cuisine also stimulates enterprise, not only in the restaurant sector (in which Hangzhou was the ultimate pioneer), but in the support industries of food and culinary herb cultivation, transport and storage, food and health writing and reporting.⁷ Further, as we learn more about food chemistry and phytochemistry, which underpin flavour and texture, and how they relate to health, cuisine can offer health advancement as well,¹⁴ accompanied by economic advantage.¹³

Social cohesion and cuisine

The ownership of a "Concept of Basic Food and Flavours", on which cuisine may be built, can contribute to and be a feature of cuisine. In China this would be the Fan-Tsai principle where the basic foods are rice, green vegetable and fish, and where the basic flavours are salt, vinegar and soy sauce.

Cuisine also provides for social, business and household pride and hospitality. It is creative and an art form (in Zhejiang province accompanied by story-telling, poetry, music and costumery when at its most sophisticated). It encourages excellence and may, for better or worse, reflect privilege or, at least, achievement.

Health, well-being and happiness

Good eating and good company undoubtedly provide for happy occasions, often celebratory ones.² We are learning more about social activity of this kind and how it is conducive to health.¹⁵⁻²⁰ Well-being may be physical, mental, spiritual or material and its science is growing. With the greater interaction between the food and nutrition sciences on the one hand and the neuro-behavioural sciences on the other, we can expect a greater emphasis on cuisine and health. It is expected that new impetus to the field of "Cuisine and Health" will be provided by the papers from the Hangzhou deliberations of 2003.⁴

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杭菜，它的起源至少可追溯到六世纪，当时从北京到杭州的大运河的修建刺激了贸易和移民，与众不同的杭菜逐渐形成，在二十世纪九十年代杭菜在中国浙江省杭州市得到了迅速的恢复。本地区人口格外的健康指数为新的食品链、食品文化和食品科学关于人体健康情况的综合研究提供了一个基础。通过环境的承受程度、经济的发展、社会的凝聚力、健康状况、欢乐和幸福 来表明“人类食量”的标准应予以支持。对于这些问题以前很少有人进行系统的学术研究。经过具有十五万会员的浙江省科学技术协会和国际组织、主要是国际营养科学联盟和它的伙伴世界卫生组织、联合国粮农组织和杭州商学院的共同努力把这个领域通过这期亚太临床营养学杂志整合在了一起。这篇报道建立在近期相关的工作之上特别是关于营养和心血管系统疾病的 Okinawan 圆桌会议，与会者一致认为 Okinawan 饮食在健康保护和脂肪果（像非洲北部和西部食物中的棕榈果）地位的评价中有其特有的性质。

There has been a rapid and remarkable recovery in Hangzhou, Zhejiang Province, China, during the 1990s, of a distinctive cuisine whose origins can be traced back to, at least, the building of the Grand Canal between Beijing and Hangzhou in the 600s AD and the stimulus to trade and migration, that was provided. This, along with exceptional health indices in the region, provides a basis for a new integrative study of the food chain, food culture and food science in regard to the human condition, which would be manifest by the degree of environmental sustainability, economic progress, social cohesion, health status, well-being and happiness that these dimensions of "food for humans" should support. Collectively, these have rarely been subject to systematic scholarly pursuit. Through the endeavours of the Zhejiang Association for Science and Technology, representing some 150000 professionals and the international community, represented principally by the International Union of Nutritional Sciences (IUNS) and its partners in WHO, the FAO Network of Excellence and the Hangzhou University of Commerce, this field has been brought together through the papers in this issue of Asia Pacific Journal of Clinical Nutrition. The report builds on related endeavours in recent times, notably 'The Okinawan Roundtable on Nutrition and Cardiovascular Disease' which recognizes the exceptional and distinguishing features of the Okinawan diet in health protection, and the assessment of the place of fatty fruits, like red palm fruit amongst "North and West African Foods".

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