



中华海外生态学者协会  
Sino-Ecologists Club Overseas

## NEWSLETTER OF SINO-ECO CLUB OVERSEAS (中华海外生态学者协会会刊)

December 22, 2004

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## A MESSAGE FROM THE SINO-ECO PRESIDENT (会长之声)

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Dear SINO-ECO members and friends:

As the special holiday season is approaching, on behalf of 2004-2006 Committee, I would like to extend my best wishes to you and your family: Merry Christmas and Happy New Year!

I am very pleased to have the opportunity and your confidence and trust to allow me to serve the Sino-Eco Club. I am also grateful for your enthusiasm and strong support for the SINO-ECO activities and our Committee during the past 7 months. As a result, our members are becoming more and more active and our Club is moving toward to more dynamic and attract more and more members.

The New Year is always a time for hopes. Our Committee is hoping to serve our members as best as we can in the New Year. The Committee will try to focus on the following four major efforts:

- 1) Continuously attracting more and more new members and enhancing the website and newsletter;
- 2) Organizing the SINO-ECO traditional Get-Together party at the coming ESA-INTECOL meeting in Montreal;
- 3) Planning and co-hosting the 2005 carbon and management symposium in Guangzhou (China);
- 4) Cooperating with the Institute of Botany (the Chinese Academy of Science) for helping and improving the journal of ACTA PHYTOECOLOGICA SINICA.

Yesterday is history, tomorrow is a hope, and today is a gift, that is why we call it the present. May your holiday be filled with joy, appreciation, and love. May your New Year be prosperous and successful!

Changhui Peng



## **BRIEF NEWS (简明新闻)**

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The current AES committee would like to invite ESA members who are interested, involved, and/or conduct research in Asia to join the AES when you renew your 2005 ESA membership. (Shili Miao)

The proposal for 2005 Guangzhou International Symposium on Ecosystem Carbon Balance and Cycles: Theory and Application, prepared by the SINO-ECO Committee and the South China Botany Garden (The Chinese Academy of Sciences), has been officially approved (with funding support) by the Chinese Academy of Sciences and the Association of Science and Technology of Guangzhou. The symposium intends to invite and support about 10 SINO-ECO members and other international and domestic experts in the field to attend this symposium. The Announcement and First Call for Abstract will be sent to the SINO-ECO group e-mail as well as be posted on the SINO-ECO website shortly. For more information, please contact Hong Jiang ([hongjiang@consbio.org](mailto:hongjiang@consbio.org)) or Changhui Peng ([peng.change@uqam.ca](mailto:peng.change@uqam.ca))

Professor Kaihong Lu, visiting scholar from Ningbo University, has recently made a trip to West Palm Beach and Melbourne, Florida. Sino-Eco members Drs. Ben Gu (South Florida Water Management District) and Junda Lin (Florida Institute of Technology) showed Professor Lu the south Florida wetlands and Vero Beach Marine Laboratory. (Ben Gu)

## **REPORTS FROM SINO-ECO MEMBERS(会员报告)**

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### **2004 Beijing Regional Carbon Budgets Workshop**

The 2004 Regional Carbon Budgets Workshop: from methodologies to quantification, organized and hosted by the Institute of Geographic Science and Natural Resources Research (Chinese Academy of Science), Global Carbon Project, and CarbonEurope-GHG, was successfully held in Beijing between 15 and 18 November. The central objectives of this meeting were to develop a common framework to improve comparability among different approaches and estimates of carbon stocks and fluxes and to identify key elements, approaches, models and techniques available to do regional carbon budgets. The meeting has invited about 70 carbon researchers and experts from over 22 countries. The 3 SINO-ECO members including Yude Pan, Osbert J. Sun, and Changhui Peng participated the meeting. Yude served on the Scientific Committee and chaired one session. Changhui gave a talk on Canadian Forest Carbon Budgets. Due to the limitation of space, the meeting provided additional room for over 40 domestic listeners including professors, research scientists and graduate students. The meeting provided a wonderful and valuable opportunity for many Chinese scientists and students to exchange and interact with international colleagues. The more detailed information and conference presentations will be available on the website:

<http://www.globalcarbonproject.org>

(Contributed by Changhui Peng)

Sino-Eco member Dr. Frank Chang was recognized at the Urban and Regional Information Systems Association (URISA) Annual Conference Awards Ceremony at Reno, NV



Dr. Frank Chang received award from URISA President Dan Parr.

on November 8, 2004. His application: The Lake Okeechobee Stage-Area-Capacity Lookup Application (LOSAC) won South Florida Water Management District (SFWMD) a 2004 Exemplary Systems in Government (ESIG) Awards in the single process systems category. Systems in this category are outstanding and working examples of applying information system technology to automate a specific single process or operation involving one department or sub-unit of an agency. The system application results in extended and/or improved government services that are more efficient and/or save money. LOSAC is an intuitive, interactive and dynamic web application based on HyperGIS. It displays

the current, historical or hypothetical Lake Okeechobee conditions that include lake stage, area, capacity and depth information as well as their trends. It can be used to support various water management decision-making processes in water supply, disaster mitigation and ecosystems restoration (Contributed by Frank Chang).

**Congratulation, Frank!**

## MEMBERS ON MOVE (会员动向)

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Dr. Junda Lin, has just been appointed as Co-Director, Institute for Ocean Engineering & Marine Science in Florida Institute of Technology (FIT). Congratulation, Junda!

Dafeng Hui has recently moved to Duke University. His current contact information is follow: Department of Biology, Duke University, BOX 90883, 139 Biological Sciences, Durham, NC 27708. Phone: 919-613-8215; Fax: 919-660-7293; Email: [dafeng@duke.edu](mailto:dafeng@duke.edu)

## RECENT PUBLICATIONS (最近发表论文)

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### **Bai-Lian (Larry) Li**

Chen, X. and B. L. Li. 2004. Characteristics of diurnal water loss of five adjacent ecosystems at Changbai Mountains in Northeast China. *Polish J. of Ecology* 52: 299-307.

Medvinsky, A. B., A. Y. Morozov, V. V. Velkov, B.-L. Li, M. S. Sokolov, and H. Malchow. 2004. Modeling the invasion of recessive Bt resistant insects: an impact on transgenic plants. *Journal of Theoretical Biology* 231:121-127.

Chen, X., X. Zhang, and B. L. Li. 2005. Influence of Tibetan Plateau on vegetation distributions in East Asia: a modeling perspective. *Ecol. Modelling* 181: 79-86.

### **Han Chen**

**Chen, H.Y.H.**, S. Légaré, and Y. Bergeron. 2004. Variation of the understory composition and diversity along a gradient of productivity in *Populus tremuloides* stands of northern British Columbia, Canada. *Canadian Journal of Botany* 82: 1314-1323. [\[PDF\]](#)

**Chen, H.Y.H.**, G.J. Kayahara, and K. Klinka. 2004. Effects of light and substrate on planted conifer seedlings in coastal British Columbia. *Northwest Science* **78(2)**: 101-110. [\[PDF\]](#)

### **Daolan Zheng**

Zheng, D., J. Rademacher, J. Chen, T. Crow, M. Bresee, J. Le Moine, and S-R Ryu. 2004. Estimating aboveground biomass using Landsat 7 ETM+ data across a managed landscape in northern Wisconsin, USA. *Remote Sensing of Environment*, 93: 402-411.

Zheng, D., S.D. Prince, and T. Hame, 2004. Estimating net primary production of boreal forests in Finland and Sweden from field data and remote sensing. *J. of Vegetation Science*, 15: 161-170.

### **Qinglai Dang**

Zhang, S.R. and Q.L. **Dang**. Effects of soil temperature and CO<sub>2</sub> elevation on gas exchange, in vitro carboxylation and chlorophyll fluorescence in jack pine and white birch seedlings. *Tree Physiology* (in press)

Zhou, X.L., C.H. Peng, Q.L. **Dang**, J.X. Chen and S. Parton. A simulation of temporal and spatial variations in carbon at landscape level: A case study at Lake Abitibi Model Forest in Ontario, Canada. *Mitigation and Adaptation Strategies for Global Change* (in press).

**Dang**, Q.L. and S. Cheng. 2004. Effects of soil temperature on ecophysiological traits in boreal trees. *Forest Ecology and Management*. 194: 379-387.

Zhang, L.J., C.H. Peng, and Q.L. **Dang** (2004). Individual-tree based basal area growth models for jack pine and black spruce in Northern Ontario. *Forestry Chronicle* 80: 366-374.

Zhou, X.L., Peng, C.H. and Q.L. **Dang**. 2004. Assessing the generality and accuracy of the TRIPLEX model using in situ data of boreal forests in central Canada. *Environmental Modelling & Software* 19: 35-46.

### **Weixing Zhu**

Zhu, W.-X. and Carriero, M.M. 2004. Temporal and spatial variations in nitrogen cycling in deciduous forest ecosystems along an urban-rural gradient. *Soil Biology & Biochemistry* 36: 267-278.

Zhu, W.-X. and Carriero, M.M. 2004. Soluble organic nitrogen and microbial nitrogen dynamics in deciduous forest soils: Neglected segments of the nitrogen cycle. *Soil Biology & Biochemistry* 36: 279-288.



## ECOLOGICAL ESSAYS (生态科普)

### 自然天敌的解除与外来植物的入侵

刘虹

南佛罗里达大学

引种非本地产的外来植物在全世界的农业，林业，及园林界已有很长的历史，它为丰富当地的食物水果和园林美观起了不可底估的作用。除特意引进外，外来种也有因偶然因素而传入的。虽然只有很少一部分引种的外来植物能够在新环境里自然生长，其中只有更少一部分能逸为野生，野生杂草对农业的危害不是一个陌生的问题。但外来种对当地的自然植物群落的侵犯性问题却是最近十几年来才受到学术界的重视。外来种可以给它们入侵的自然环境的生态过程带来极大的破坏，且其造成的经济损失也是巨大的。正因如此，最近几年来许多国家，包括美国在内，对外来种入侵自然群落现象的成因，后果，及预测防治的理论及实践的研究越来越热烈。这其中产生了许多对外来种入侵成功的理论假说，自然天敌的解除就是其中之一。这一假说阐述的是外来种之所以能够在新的环境里迅速扩散，是因为它逃脱了在原生地的自然天敌的种群控制。这一假说隐含着两个前提：(1) 该植物在原产地的种群受到食植动物的控制；(2) 该植物在入侵地受到来自食植动物的种群压力很小。

测试这两个前提的一种方法是在同一地区将本地产植物的食植动物量及其对植物种群的影响和外来同属的入侵性和非入侵性植物的食植动物量及其影响作比较。根据自然天敌解除假说，我们可以预测以下三个结果：(1) 本地产植物的食植动物量比外来入侵性植物的多；(2) 本地产植物的专性食植动物转移到外来入侵性植物上的很少，但转移到外来非入侵性植物上的多；(3) 本地的食植动物对本地产植物和外来非入侵性植物的种群压力大于对外来入侵性植物种群。不过这样的三向比较还少有人进行。测试天敌解除假说的另一种有效方法是在入侵植物的原生地和入侵地同时进行天敌解除的试验来检验食植者对种群的影响。这种平行试验也很少有研究者进行。其中主要原因是这种试验通常需要跨国合作，费用较大，且程序较复杂。



地处亚热带的美国南佛罗里达州是引种外来观赏种和果树的胜地。在所难免的是其中一些外来种逃逸为野生并侵入到南佛州的自然植物群落中，与本地植物竞争并打乱本地自然生态过程。不过这些外来入侵种当中有些与本地产的同属植物并肩生长，这种情况给研究验证生物入侵的一些假说提供了难得的机会。比如 *Eugenia* 这个属，在南佛州有一个外来入侵性很强的来自南美洲的叙里南樱桃 (*E. uniflora*)。它们与南佛州本地生的几个 *Eugenia* 种同地生长。同时与叙里南樱桃约100年前一起从巴西引进南佛州的还有另外三个同属植物，但它们到目前为止仍不具备侵犯性，只能在植物园和果园里见到它们。我将使用以上提到的方法在南佛州进行 *Eugenia* 种的食植动物三向比较，并在条件允许的情况下，在巴西建立平行试验以检验天敌解除假说及其他一些相关学说(比如环境限制假说)。类似这样的研究机会在中国和北美之间也很多。

## ECOLOGICAL LITERATURE (生态文学)

### 散文

### 鳄鱼智商高到令人吃惊

娜塔丽·安吉尔

一只成年美洲鳄漂浮在水藻丛生的池塘水面，它长达6英尺的庞大身躯纹丝不动，只有恶魔般琥珀色的眼睛偶尔转动一下。在常人眼中，这个可怕的大家伙简直就是恐龙的后世子孙，又仿佛是一段长着牙齿的原木，或者是一个即将问世的高级手袋。

然而，对于马里兰大妮·索瑞斯博士来的两栖猫咪，极为悲的误解。当然，这一起，有80颗尖利的牙的下巴就会立刻脱



学的神经系统科学家达夫说，美洲鳄不过是一只大型惨的是，它一直遭到了人们猫咪的皮肤粗糙而布满突齿，它的尾巴一旦发力，你白。

美洲鳄胖鼓鼓的肚阳光灿烂的笑容，都加，她常对着美洲鳄轻声说：“宝贝，你真可爱，我真想把你抱在怀里！”

皮、懒洋洋伸开的四肢以及令索瑞斯博士对它宠爱有

#### 鳄鱼拥有第六感

今年32岁的索瑞斯博士出生在里约热内卢，母亲是巴西人，父亲来自美国。她的父亲曾研究过多种鳄鱼。或许是基因的缘故，她一直对鳄鱼研究颇感兴趣。在整个鳄鱼王国里，美洲鳄是她的最爱。她曾说：“这些精灵们不仅美丽、幽雅，有时还笨得可爱。”

美洲鳄是精明的观察家，它们好奇心十足。当索瑞斯博士在池塘边的玻璃围栏旁坐下时，她的宝贝们就会游过来一探究竟。索瑞斯博士说：“人们都把鳄鱼当成愚蠢的爬行动物，其实它们非常好奇，它们希望对周围的情况有所了解。”

这么说还远远不够。在她眼里，鳄鱼简直就像新闻记者，当前正在发生的事对它们非常重要。作为研究动物行为的神经支持这一领域的专家，索瑞斯博士的最新发现表明，鳄鱼甚至拥有第六感。

一些鳄鱼的咽喉周围长着一些小突起，某些种类的鳄鱼甚至全身都有这样的突起。科学家很早以前就注意到了这一点，但一直无法理解这些突起的功用。索瑞斯博士的研究表明，这些小突起属于感觉器官，能令鳄鱼感觉到水面最轻微的波动，从而预感到一顿美餐的降临。

#### 令人惊叹的“装甲车”

这一新发现不过是一系列新发现中的一项。鳄鱼是个神奇的种族，在2.3亿年前就在地球上繁衍，一直按照自己的节奏生存至今。它们当中有的以陆地为家，有的居住在海里，更多的被归入水陆两栖。

皮瑞恩·罗斯教授是佛罗里达大学的野生动物生态及保护方面的专家，在鳄鱼研究领域颇有建树。他说：“鳄鱼的祖先基本上同现在的它们没什么区别，这是因为鳄鱼的身体结构能适应自然。”

科学家发现，鳄鱼的身体简直就像装甲车。在粗糙厚实的表皮之下，还有层层叠叠的保护层。再往下，则是鳄鱼强大的免疫系统。

尽管鳄鱼生活在泥塘、礁湖等微生物俱乐部的所在地，它们还是有可能遭到最有杀伤力的攻击，被开膛，丢掉一条腿，甚至失去整个下颚。然而，即便如此，鳄鱼也不会掉一滴眼泪。

罗斯博士说：“鳄鱼的免疫系统极为发达。它身上的伤口如果出现在人身上，必定会导致极为严重的败血症，对它而言却是小菜一碟。”强大的免疫功能令人类相形见绌，也令科学家惊叹不已。约翰霍普金斯研究中心的研究员们已开始对鳄鱼的血液进行研究，希望能够发现可用于人体的更好的抗生素。

### 尼罗河鳄鱼之谜

千万不要以为鳄鱼只是四肢发达、头脑简单的低级动物，它们的智商非常高，绝对是爬行动物中的佼佼者。它们不仅会互相耳语，还会为争夺地位而争吵，甚至还能区分友善的观察者和带着枪的偷猎者。令人佩服的是，它们在养育后代方面的本领，甚至比母鸡更令人称道——毕竟，母鸡不能像鳄鱼那样把孩子含在嘴里躲避危险。

乔治·阿梅托博士是布朗克斯动物园野生动物保护协会的遗传学家，他和同事即将宣布一项研究结果。一直以来，尼罗河鳄鱼因其出色的捕食能力和可怕的力量而闻名非洲。据说，它们能捕食成年斑马和野羚羊，甚至渔夫也会成为它的腹中餐。然而，科学家发现，尼罗河鳄鱼其实是两种不同的鳄鱼。其中的一种生活在东非和西非，另一种则在东非和马达加斯加繁殖。按照阿梅托博士的说法，它们可能并不是近亲。

现在世界上已知的鳄鱼只有 20 多种，因此，这个新发现将会在学界引起极大轰动。当然，要让这个新种类获得适当的学名并令人们广泛接受，还需要时日。

在古埃及，鳄鱼被视为河神的化身而被人们膜拜，有时鳄鱼还被做成木乃伊。因此，在确定尼罗河鳄鱼实际上是两种鳄鱼后，科学家还想进一步知道，究竟哪一种才是古埃及人命名的、真正的尼罗河鳄鱼。阿梅托博士和瑟布让那森博士等人希望能从鳄鱼木乃伊中获取原版尼罗河鳄鱼的 DNA，并与现存的两个品种进行对比，从而破解谜团。



当鳄鱼出现在你家的稻田里……

对历史的研究固然重要，但是，在动物保护者眼中，如何采取更有力的措施保护鳄鱼更为紧迫。几乎所有种类的鳄鱼都处于危险之中，人们或者认为它有害而消灭它，或者为了炫耀美丽与财富而取它的皮，或者为了建造牧场而侵占它赖以栖息的沼泽。这些极大地威胁着鳄鱼的生存。

要说处境最危险的，还要属中国的扬子鳄。扬子鳄是一种较为温和的食肉鳄鱼，体长7英尺左右，只有美洲鳄的一半，它们生活在中国的长江流域。扬子鳄的种群一度非常昌盛，至少有几十万只。然而，5000年的稻米种植，毁灭了大部分扬子鳄赖以生存的家园。如今，野生扬子鳄的数量仅有100只左右。

为了保护珍稀的扬子鳄，瑟布让那森博士及其同伴与中国的环保组织合作开展了一系列活动。他们将人工繁殖的扬子鳄放归选定的区域，使其与这片区域内的野生扬子鳄共同生存，并进行繁殖。这一尝试获得了初步成功，他们去年放归的3只扬子鳄之一就要做母亲了，但这个鳄鱼宝宝的父亲究竟是不是新移民，还需要进一步研究。科学家们表示，放归扬子鳄只是整个拯救计划中比较简单的部分，比较难的是选择合适的栖息地使它们兴盛起来。这就意味着要使农民接受，扬子鳄时不时地出现在他们的稻田里。

鳄鱼和鸟类如此相像……

鳄鱼的生存意义还不止于此。鳄鱼是我们能够触摸到的和恐龙最相似的动物。这种相似不是偶然的，也并非仅仅停留在表面。最新的分类学分析表明，恐龙、鳄鱼和鸟类属于同一个动物分支。鸟类和鳄鱼都有4个心室，动静脉血液分别流入不同的心室和血管，这不仅使新陈代谢更加旺盛，也为大脑带来更多氧气，使它们的智力水平更高。

科学家的研究最近取得了一些令人惊叹的成果。他们发现，鳄鱼和鸟类不仅在大脑结构上很相似，很多习性也非常相像：鳄鱼会筑巢、产卵并进行孵化；当卵有些干燥时，鳄鱼妈妈会用尿液使它们保持湿润；小鳄鱼出壳后，会像小鸟一样叫，提醒妈妈将身体挪开；鳄鱼妈妈会把孩子带在身边抚养几年，保护它们不受袭击并教会它们如何度过困难时期。

雄鳄鱼与雄鸟也极为相似。它们对于领土及地位的概念都非常清晰，它们会建立相对稳定的级别，从而避免发生不断的纷争。罗斯教授说：“雄鳄鱼对周围几英里范围内的邻居都了如指掌，它们知道哪些鳄鱼比自己地位高，哪些比自己低。”

## 古典诗词

### 无题 — (唐 李商隐)

相见时难别亦难，东风无力百花残。  
春蚕到死丝方尽，蜡炬成灰泪始干。  
晓镜但愁云鬓改，夜吟应觉月光寒。  
蓬山此去无多路，青鸟殷勤为探看。

### 忆王孙 — (宋 李清照)

湖上风来波浩渺，秋已暮，红稀香少。水光山色与人亲，说不尽，无穷好。  
莲子已成荷叶老，青露洗，频花汀草。眠沙鸥鹭不回头，似也恨，人归早。

## ECOLOGICAL PHOTOGRAPHY (生态摄影)

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Mojave Desert, Joshua Tree National Park, CA. (Frank Chang).



Skull Rock in the Joshua Tree National Park (Frank Chang).



A scene of Stone Forest of Yunan in Splendid China, Florida. A new way to preserve natural landscape? Unfortunately, this park has been closed due to business problems since the late 2003 (Ben Gu).



Elephants grazing on shrubs reduce the abundance of woody species and thus keep them from taking over the grasses in African savannahs. The photo was taken in Serengeti National Park, Tanzania (Quan Dong).

## GREEN HUMOURS (绿色幽默)

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怎样才能把豆子卖出去?

假如你有一百斤黄豆要卖出去, 可现在市场上黄豆正滞销, 请问你有什么办法把豆子卖出去?

A: 如果市场上豆子滞销, 那么就把豆子剥成豆瓣, 卖豆瓣; 如果豆瓣卖不动, 就把豆瓣腌了, 卖豆豉; 如果豆豉还卖不动, 那就加水发酵, 改卖酱油。

B: 将豆子制作成豆腐，卖豆腐；如果豆腐不小心做硬了，就改卖豆腐干；如果豆腐不小心做稀了，就改卖豆腐花；如果实在太稀了，就改卖豆浆；如果豆腐卖不动，就放几天，改卖臭豆腐；如果还卖不动，就让它彻底长毛发霉后，改卖腐乳。

C: 让豆子发芽，改卖豆芽；如果豆芽还滞销，就让它长大点，改卖豆苗；如果豆苗还卖不动，就再让它长大点，当盆栽卖，命名为“豆蔻年华”，到城市的各大中学校门口摆摊，并到白领公寓区开产品发布会，记得这次卖的是文化而非食品；如果还卖不动，建议拿到适当的闹市区进行一次行为艺术创作，主题就是“豆蔻年华的枯萎”，记得以旁观者身份给各个报社打电话报料，如成功，可迅速成为行为艺术家，并以此完成另一种意义上的资本回收，同时还可拿到报社的报料费；如果行为艺术没人看，报料费也拿不到，那就赶紧找块地，把豆苗移栽入土，灌溉施肥，除草培育，几个月后收成，再去市场卖豆子……

### SINO-ECO CLUB MEMBERSHIPS (中华生态学者协会会员资格)

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Any individual with Chinese origin and at least one year of overseas professional in ecological fields, willing to recognize and follow the bylaws and paying the membership dues, shall be deemed to be eligible as a member. The due for Regular and Student Members in developed countries will be \$10 and \$5, respectively, for those in developing countries will be \$5 and waived, respectively. For new members, dues paid before March 1 will cover the current year and the following year; those paid between Oct. 1 and Feb.28 will be half of the due and will cover the current year. Donation is greatly appreciated. Please fill in the application form which may be downloaded from: <http://www.sino-eco.org/current/membership.htm> and sent it, with your check payable to SINO-ECO, to the treasurer (2004-2006): Dr. Yufu Cheng, Virtual Center for Spatial Analysis and Remote Sensing (VCSARS), Department of Biological Sciences, California State University, Los Angeles, 5151 State University Drive, Los Angeles, CA 90032 (US Dollars or equal foreign country's currency).



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