行政院國家科學委員會專題研究計畫 期中進度報告

自然歷史與自然系統的文本初探：林奈、達爾文、李時珍(2/3)
期中進度報告(精簡版)

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計 畫 主 持 人：張漢良

報 告 附 件 ：出席國際會議研究心得報告及發表論文

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行政院國家科學委員會專題研究計畫期中精簡報告

計畫名稱： 自然歷史與自然系統的文本初探：林奈、達爾文、李時珍 (2/3)

計畫編號：95-2411-H-002-013-2/3

執行期限：2006/8/1 至 2007/7/31

主持人：張漢良

執筆日期：96 年 5 月 31 日

本計畫第二年進行順利，成果豐碩，主要的原因是主持人適逢教授休假研究，得以充分利用時間。以下以編年方式摘要報告。

（1） 主持人於 97 年 1 月 3-6 日赴中國大陸湖北省蘄春縣李時珍故里考察，參訪了李時珍紀念館和研究中心，並購買了該地出版的書籍。

（2） 97 年 1 月應《跨文化對話》期刊執行主編南京大學錢林森教授邀請，為該刊〈中國、瑞典文化交流〉專號撰寫林奈論文。該文預計今年 6 月出版。原稿附錄於後，請卓參附件一。

（3） 97 年 3 月 15 日及 4 月 12 日於北京師範大學文學院為比較文學專業的研究生發表了兩場演講，介紹本人研究計畫，專注於林奈與中國的關係。

（4） 97 年 5 月 24 為林奈 300 年誕辰，本人因為於 2006 年當選為倫敦林奈學會(The Linnean Society of London)會士(Fellow)，特專程赴英，參加年會，並接受正式入會儀式。

（5） 97 年 6 月 7-10 日林奈當年任教的瑞典烏普撒拉(UppsalaUniversity)大學召開國際會議，主題為《林奈時代的科學語言》(Languages of Science in the Time of Linnaeus)，本人由英兼程前往參加，並發表論文〈日曆與格言：林奈《植物學概要》與《植物哲學》的文類初探〉(“Calendar and Aphorism: A Generic Study of Carl von Linné’s *Fundamenta Botanica* and *Philosophia Botanica*”) ，該文將收入會議專書，主持人將依規定註明係由國科會資助之計畫項目內執行。

附件一

瑞典自然學家林奈三百年誕辰（1707-2007）所引發的幾點感想

張漢良

（1）前言

2007 年元月上旬，筆者有幸在上海的一個會議上，再度巧遇南京大學的錢林森教授。承他不棄，囑咐我為他正在策劃的《跨文化對話》中國瑞典文化交流專號，撰寫與自然學家林奈有關的論文。我當時的驚喜—套句俗話說—倒真是難以形容，接著我就毫不謙讓地答應了。說來也是巧合，今年是林奈出生 300 周年紀念。2006 年 2 月我當選為倫敦林奈學會院士，正計畫於 2007 年 5 月 24 日（其 300 年冥誕的一種考證說法）在年會上接受正式入會儀式；同時也打算稍後赴林奈任教的烏普撒拉大學，出席一項林奈與十八世紀語言的會議。

（2）從達爾文上溯至林奈，再航向李時珍

這一切巧合都和我正在執行的科研專案有關。這個研究計畫題目是«自然歷史與自然系統的文本初探：林奈、達爾文、李時珍»，從 2005 年到 2008 年，共為期三年；也正是這個原因，使我利用教授七年輪值年休的機會，於 2006 年來到上海。就學科領域而言，它承接前一科研專案«符號學的生物基礎»（2001-2004 年）而來。我在執行生物符號學科研時，曾經和當時的博士導生，現在的台大同事簡瑞碧博士，比較有系統地閱讀與討論達爾文的主要著作，並由達爾文上溯到十八世紀瑞典自然學家林奈（Carolus Linnaeus [拉丁名]或 Carl von Linné [冊封後瑞典名]）。當時除了與愛沙尼亞和丹麥的生物符號學研究群往還之外，還在台大生命科學院，混雜在大學本科生中，旁聽了一學期的現代生物學。

林奈是近代生物分類學（taxonomy）或系統學（systematics）的開山祖。大體上說來，他靜態的生物分類學和以生物史為定位的進化論是不相容的，更不用說十八世紀的自然史和現代生物學是兩碼事兒。然而仔細研究林奈和達爾文的著作，就會發現他們有許多可以相提並論之處。首先，兩人都是傳統的自然學家，或者稱為博物學家，兩人都從事自然史的書寫，這個書寫傳統可上溯到古典時期的普裏尼（Pliny the Elder, AD23-79）。其次，達爾文生物學系統的主要兩個暗喻（master tropes）“政體”（polity）和“經濟”（economy），都源出於林奈。這兩位自然學家都熟讀舊約聖經，他們的自然歷史從不同的角度以創世紀神話作為藍本；就象徵意義而言，他們無異以科學研究參與了造物的盛舉。最後一點，兩位自然學家都擅長撰寫遊記（案：田野調查紀錄），這種田野紀錄是如何建碼的？有無客觀科技（如顯微鏡的發展）的制約？有無書寫體例與脈絡可循？書寫文本如何對他們的自然描寫提出規範和質疑？以上這些問題都值得深入探討。我在 2005 年創刊，紐約出版的《生物符號學期刊》(*Journal of Biosemiotics*)上面曾作了初步的考察（注 1）。

在林奈的自然系統出現前兩個世紀，李時珍提出了他的自然系統《本草綱目》。他根據什麼樣的文本書寫規畫他的系統？除了植物性別差異外，林奈和李時珍有任何交會的地方嗎？林奈寫作時，李時珍的著作已經被翻譯為德文在歐洲

流傳，林奈生前曾派他的弟子到日本和中國進行田野工作，包括本輯引介的奧斯貝克(Pehr [Peter] Osbeck, 1723-1805)（注 2）。這些事實雖有文獻可考，然而國內比較文學界問津者罕見，值得探討。《跨文化對話》此時此刻介紹包括林奈的瑞典諸賢，而我有幸能躬逢其盛，豈非巧合？

（3）當代學者對“自然系統”的質疑

林奈於 1735 年在荷蘭萊頓出版了他的論文《自然系統》（*Systema Naturae*）（注 3）。這本大版面的對開本只有十數頁厚薄，但是影響深遠，後來經過了很多版的增訂，第十版集其大成。林奈替生物世界建立了分類系統，今天我們所習慣的界、門、綱、目、科、屬、種分類法是對應漢名；它們的原名及概念, 雖然可上溯亞裏斯多德，並經歷代學者敷衍，卻有賴林奈深化；此外動植物的拉丁文名稱亦由林奈再規範。舉例來說，“人類”的拉丁名 *Homo sapiens* （智人）便是根據林奈發明的雙重命名法，這個命名法一直沿用至今。下面我會提到的茶，拉丁文學名叫 *Camellia sinensis*，前面一個字 *Camellia* （茶）指其類（genus），後面的 *sinensis*（中國的）指其種（species），屬於較低的分支，限定並描述了它從屬的類。

林奈以分類學為圭臬的《自然系統》出版以後，受到不斷的質詢與挑戰，法國當代思想家傅柯（Michel Foucault, 1926-84）也曾在這段歷史中扮演重要的角色。傅柯在其名著《詞與物》(*Les mots et les choses*, 1960，英譯 *The Order of Things*, 1973）中，對十八世紀知識系統的方法論作了深入的批判，批評的物件之一是今天所謂的生物學，更正確地說，是生物學的前身，當然林奈的分類法首當其衝。其實，“biology”（ 生物學）這個字在現代歐洲語言中出現得很晚，到十九世紀初才出現，由德文傳到英文。根據《牛津大字典》(*OED*)的一個例句，1894 年，也就是十九世紀中葉時，“有人指出“biology”這個字最近開始被作家普遍使用”。傅柯質疑的要點是，在 biology 出現之前，十八世紀的學者討論的倒底是些什麼呢？答案可以想見，是自然歷史（natural history）。既然我們要討論 natural history，用拉丁文說，naturalis historia，我們就不可能規避關於“自然”（Nature）的“敍述”。林奈以分類法處理的自然，既非自然，亦非歷史。自然是鮮活完整的生命（生物），豈能以命名分類的機械架構再現（represent）？要再現自然整體或個別生物，無法規避他們在時間中的發展，亦即他們的歷史。因此傅柯認為林奈的做法沒有給自然歷史、或生物一個公道。傅柯討論林奈與生物學前身的章節，便叫分類（classer）（注 4）。有趣的是，傅柯曾駐節瑞典，除了外交工作外，也在林奈當年任教的烏普撒拉大學研究，此為另一因緣，這裏存而不論。傅柯在書中提到達爾文一次，並非他有意忽視達爾文，主要的原因是他討論理性主義時代的知識系統。林奈後一百年，達爾文出現了，大家都知道達爾文不用“biology”（生物學）這個字眼，他用什麼呢？他用的竟然也是“natural history”（自然歷史）。在《物種原始》（*On the Origin of Species*, 1859）中，達爾文特別批評 “系統學”（systematics），也就是林奈的分類學傳統（注 5）。既然生物分類無法交代自然歷史，達爾文的做法便是寫一本自然歷史，《物種原始》一書是達爾文的

natural history，或者可說是自然的後設歷史（meta-natural history）。

“自然歷史”（naturalis historia）這個辭彙是誰創始的？西元一世紀普裏尼的名著就是《自然歷史》，這一套三十七卷的巨著前無古人。普裏尼說：“我的作品不登大雅之堂，作者也不需要才器，既無宏論，亦無對話，也沒有軼聞奇事，讀起來可以說是乏味無聊。我的目標蠻平實的，就是自然世界（rerum natura），或換言之，就是生命（vita）。”（注 6）有趣的歷史架構出現了。西元一世紀的自然歷史到十九世紀達爾文的自然歷史中間，在十八世紀中葉出現了一個自然系統──縱然他可上溯至前現代，如中世紀經院哲學，及現代，如林奈所推崇的義大利人切撒庇諾 (Andreas Caesalpinus, 1519-1603) 和法國人吐赫訥佛爾(Joseph Pitton de Tournefort, 1656-1708)。他們大體上遵循兩種邏輯方法，一個是亞裏斯多德的分類學方法，由上而下，具有相當的演繹性與抽象性。另外則是類似李時珍的草藥學家（herbalists）的經驗性、歸納性作法，由下而上，替亞裏斯多德的演繹與階層秩序，充實了看似蕪蔓但具體的個體與單元。因為《自然系統》泰半以條目的方式出現，書寫者的主體性顯然是被割裂、被辭書形式化了，喪失了傅柯等人所謂的自然的鮮活形象，換言之喪失了生命。這點兒我們也可以從李時珍的《本草綱目》看出來。

（4）作為田野考察散文家的林奈

雖然如此，傅柯和達爾文似乎故意忽視了另外一種面目的林奈，透過他的書寫我們看到一個主體性強烈的自然學家，和寫《小獵犬號探險日誌》(*Journal of Researches into the Natural History and Geology of the Countries Visited during the Voyage round the World of H.M.S ‘Beagle’ under Command of Captain Fitz Roy, R.N.*)的達爾文不相上下。我要特別舉出林奈的《拉普蘭遊記》（*Tour in Lapland*）作例子（注 7）。1732 年林奈申請到一筆經費，前往瑞典和芬蘭北極區內的拉普蘭從事田野工作。可想而知，田野工作者除了搜集標本外，也需要透過文字紀錄，《拉普蘭遊記》就是他的日記本。他寫這本日記時沒有預設的讀者，也沒有想過要出版；事實上，在他去世之前，這本日記從未出版。我們可以進一步想見，寫給自己作為備忘錄的日記，書寫體例應該不是很嚴格的，和其他的理論著作不同。這本日記，或者說遊記，文采奐然，讀來頗引人入勝。作者在日記中隨手拈用古典文學詩句，包括莎士比亞，中間有些段落讓我們發現，這個處處講究系統、邏輯與規律的學者，原來相當迷信。

1778 年林奈去世，之後遺孀把他的藏書、手稿和標本拍賣，流落英國，英國人便依此建立了舉世聞名的林奈學會（The Linnean Society of London），其中包括《拉普蘭遊記》的手稿。這是世界上第一個生物學學會，歷來不乏名人，如達爾文。後者和華萊士（Alfred Russel Wallace）兩人的進化論便是同時對林奈學會發表的。有趣的問題出現了。林奈學會的會長，也就是購買文獻的司密斯(James Edward Smith, 1759-1828)整理了這份瑞典文手稿，又請人翻譯成英文，1811 年在倫敦出版。印刷出版的作品和原來瑞典文寫作的日記對讀者的訴求，以及滿足這種訴求的呈現方法顯然不同。更有趣的是，瑞典文寫作的手稿竟然以英文印刷

首先呈現給世人。直到 1889 年，也就是英文版出版後七十多年，瑞典人才根據英文本翻譯成瑞典文在瑞典出版。這份手稿的際遇並未就此結束，1913 年，瑞典人終於能根據林奈的手稿再版了“真正”的瑞典文版。一份簡單的、沒有經過翻譯者與編者動過手腳的手稿，顯然更能表達作者的主體性。歷經了波折，到底最後的瑞典文版本呈現的主體性是真相嗎？手抄本與印本之對照，這也是值得吾人關注的課題。

眾知林奈有兩種面目(注 8)，泰半就其方法論及性格而論。但我們也可以就書寫媒體來劃分兩個林奈，一個是以拉丁文寫作植物學論文的林奈，另外一個是以瑞典文寫自傳和遊記的林奈。拉丁文固然是死文字、書寫文字，植物學拉丁文根據中世紀及文藝復興拉丁文發展出來，透過自然觀察和新航路新大陸的發現，新的物種出現了，他們需要被命名。新命之名往往借用希臘文，新造的新詞卻是希臘人與羅馬人不認識的。這種新植物拉丁文的最大功臣便是林奈(注 9)。這種看似死亡的文字卻變成自然學家溝通、研究、論戰的活工具。這兩種書寫系統都使用標點符號，拉丁文的符號比較有限，功能也相當固定，其實反映分類思維，而非反映語言實際使用時，無論是獨白或對白，副語言或語言輔助成分如停頓、腔調、音階、音量等的跨語音語法劃分變化（suprasegmental）。

《拉普蘭遊記》的手稿只不過是浩瀚的林奈學中的一個小例案。然而，見微知著，我們似可進而檢討自然系統與自然歷史在方法論上所呈現的一些問題，尤其是它們的符號學和闡釋學涵義。我們或能透過《拉普蘭遊記》等田野筆記、《物種原始》和其他航海日誌、舊約創世紀和普裏尼《自然歷史》的互文性，看出林奈和達爾文文本的後設性與建碼工程；此外透過各個作者，包括林奈和李時珍，對“物種”的再現方式（如分類）的比較，看出語言學家和符號學家，
如艾科（Umberto Eco）等人，對辭書（dictionary）和百科全書（encyclopedia）兩種符號運作（semiosis）的長期論爭，提出一些理論性的補強和實例性的佐證。

（5）林奈與中國

要談林奈與中國，似乎免不掉要再度淪入西方列強的海外擴張和殖民主義論述的窠臼，以及這些政治地理學的實踐，如何改變了文藝復興後人類的知識範疇，甚至知識論。這些課題誠然重要，但不是本文的興趣所在，有興趣的讀者可參見（注 8）裏斯貝特•寇爾內 1999 年的著作。此地也許我可以舉兩個有趣的小故事，博讀者一粲。

東西交通史少不了茶的貿易故事。有關林奈與茶葉的報導也不少。大家都知道，林奈是一個極端保守的，因而有時言行愚昧的愛國主義者。為了促進瑞典的經濟發展，他企圖從中國引進茶株，移植到瑞典。過程中發生的笑話自然不少。但是在眾多東來採茶取絲的歐洲人中，瑞典人倒是唯一成功移植活株茶樹的。航海家卡爾•埃克伯格（Cark Ekeberg）船長，出發前獲得林奈有關栽培的錦囊妙計，竟然於 1763 年 10 月帶回國存活的茶樹。林奈大喜過望，準備把這株茶命名為 *Camellia Ekebergia*（埃種茶）。後來的發展，當然可想而知。地處北歐，常年寒冷的瑞典怎能栽培茶樹？如果埃船長引進的是臺灣的高山茶，說不定還有希望

呢！（注 10）

偏執的林奈對命名有嚴格的規定，除了古希臘語和拉丁語外，其他語言儘量不要用，實在沒有辦法時，也要把那些鴆舌之音譯為希臘語。茶的問題來了！拉丁學名固然沒有問題，但現代歐語和拉丁普通話的/tea/（及其變奏），源自漢語（閩南語）可以說是很不理想的外來蠻語，林奈便把/t/與/th/改為拉丁語無法發音的希臘字母/θ/，如此一來，/dea/ (/thea/)便成為/θεα/，和希臘女神同名，豈不妙哉？（注 11）

林奈生前不喜遠行從事田野調查，多次田野工作，都在國內或附近進行。但他派了不少弟子漂洋過海，這些弟子被稱為使徒，顯然要與耶穌的門徒爭輝。也有人客死他鄉；奧斯貝克算是其中幸運的一位。2005 年我在倫敦林奈學會讀到他的中國和東印度紀行 1771 年出版的英譯本。此書寫中國異聞，令人歎為觀止，或令人髮指—如何選擇端賴閱讀觀點。第二冊有一節為«中國動物»（*Faunula Sinensis*），其中包括中國人：“Homo I. SAPIENS monstrosus, maccrocephalus, capite conico, *Chinensis* [或為 *Sinensis*?]: thus does Dr. *Linnaeus* rank men amongst the animals, and calls the *Chinese* with their large conic heads *monstrous* men.” （葉 321）。大要如下: “中國人屬智人，唯其頭大、圓椎臚，故妖怪也。林奈醫師其說誠然有本。”

這些材料顯然引人入勝，搞殖民論述或形象學的人，闔興乎來？撰稿時，據聞本專號已有奧斯貝克為主角的文章。我就不再掠美。

（6）後記

為了這個項目，作為一個在臺灣任教的中國人，我曾經遠赴瑞典和英國，先後尋訪林奈故居和苗圃，達爾文故居和林園，兩度在倫敦林奈學院工作，研讀手稿和拉丁文、英文及法文古籍。有趣的發現當然不少。這兒只舉一兩個例子，作為談助。（1）2006 年參觀烏城大學植物園時，內部的大堂正在裝修，以迎接 2007 年的盛會，就在預展材料中，我意外但“驚心動魄地”看到了 2006 年 5 月 16 日星期二出刊的當地報紙《早安，烏普撒拉！》（*GODMORGON uppsala*），在第 7 葉登出了我的相片和越洋電子訪問稿（注 12）。（2）2006 年，倫敦林奈學會的圖書和文獻館長姬娜•道格拉斯(Gina Douglas)女士把大英圖書館學者有關李時珍研究的信件來往提供給我，使得我研究的構想，再度獲得部份證實。（3）更令我難忘的是，2007 年元月，我透過湖南人文學院的好友，自幼親炙草木，並多識其名的李紅葉教授和其《書屋》朋友們的協助，親訪了李時珍的蘄春故里，得到了第一手的經驗。雨湖尋古，歷歷在目；嶽麓歌行，餘音嫋繞。這使我想起了林奈為旅遊田野工作所作的辯護。

林奈曾在一篇論文中指出：“理性和經驗為人類知識的兩大砥柱。兩者的結合才能成就好醫生。” (注 13) 就字源與內涵而論，他所謂的“經驗”包括“實驗”。這和李時珍秉承宋明理學的格物致知，實有異曲同工之趣味，《本草綱目》的“綱”和“目”體例，固然援用自朱熹；李時珍自序凡例曰：“雖曰醫家藥品，其考釋性

理，實吾儒格物之學，可稗爾雅詩疏之缺。”（注 14）也說明了致用與治人之學，小至草木鳥獸蟲魚名實之辨，大至望聞問切藥石處方，舍實踐則無能為功也。據記載，林奈讀過李時珍的譯本，但他並未交待版本等出處。目前我掌握了一些材料，將進一步探索；東西兩大醫哲和科學家的比較研究結論，我希望有機會再公諸學術界。

注釋

1 Chang, Han-liang. “Natural History or Natural System?--Encoding the Textual Sign.” *Journal of Biosemiotics* 1.1 (2005). 張漢良，〈自然歷史與自然系統之爭—文本符號的建碼〉，《生物符號學》，一卷一期，2005 年。紐約：新科學出版社。

2 Peter Osbeck, *A Voyage to China and the East Indies*. Trans. John Reinhold Forster. 2 vols. London: Benjamin White, 1771. 彼德•奧斯貝克，《中國與東印度航行紀》。倫敦：斑傑明•懷特，1771 年。關於林奈弟子的航行志，2007 年將有合集出版，*The Linnaeus Apostles: Global Science & Adventure*. 8 vols. Whitby: IK Foundation《林奈使徒全傳：全球科學與探險》。

3 《自然系統》前後多達十版，由最初的簡單植物綱要擴充，進而包羅自然萬有。臺灣大學圖書館田中文庫收藏大要，然多為蟲蛀。據筆者研讀林奈學會典藏，林奈在印行的書上修改，立即準備再版。

4 Michel Foucault, *The Order of Things*. Trans. A. Sheridan-Smith. New York: Vintage, 1973,172ff. 傅柯，《詞與物》，阿蘭•謝瑞敦英譯，紐約，1973。

5 Charles Darwin, *The Origin of Species: A Variorum Text*. Ed. M. Peckham，Philadelphia: University of Pennsylvania Press, 1959. 達爾文，《物種原始：全集對照版》，摩斯•裴坎姆編輯，費城：賓州大學出版社， 1959 年。Charles Darwin, *On the Origin of Species by Means of Natural Selection, or the Preservation of Favoured Races in the Struggle for Life*. London: John Murray, 1859. A Facsimile of the First Edition. Cambridge, Mass.: Harvard University Press, 1964. 達爾文，《物種原始：景印第一版》，麻州劍橋：哈佛大學出版社，1964 年。

6 Pliny (Gaius Plinius Secundus). *Natural History*. Trans. H. Rackham et al. 10 vols. Loeb Classical Library. Harvard University Press, Cambridge, Mass., (1938-1962). 普裏尼，《自然歷史》，十冊，麻州劍橋：哈佛大學出版社，1938-62 年。

7 Carolus Linnaeus, *-Lachesis Lapponica*, Or *A Tour in Lapland*. Ed. J. E. Smith. London: White and Cochrane, 1811. 林奈，《拉普蘭遊記》，詹姆斯•愛德華•司密斯編輯，倫敦：懷特與柯克然， 1811 年。

8 參看：Tore Frängsmyr, ed. *Linnaeus: The Man and His Work*. Uppsala Studies in History of Science 18. Rev. ed. Canton, Mass.: Science History Publications, 1994. Lisbet Koerner, *Linnaeus: Nature and Nation*. Cambridge, Mass.: Harvard University Press, 1999. 托瑞弗蘭斯•梅耶主編，《林奈：其人其文其事》，麻州堪頓：科學史

出版社，1994 年；裏斯貝特•寇爾內，《林奈：自然與國家》，麻州劍橋：哈佛大學出版社，1999 年。

9　參見：William T. Stearn, *Botanical Latin*. London: Nelson, 1966.威廉•史騰《植物學拉丁文》，倫敦：內爾森出版社，1966 年。按：史騰恩為林奈研專家，去世前曾任倫敦林奈學會會長。

10　參見：Wilfrid Blunt, *Linnaeus: The Compleat Naturalist*, Princeton: Princeton University Press, 2001 [1971], p. 223. 威爾弗利德•布郎特，《林奈—全方位的自然學家》，[1971 年倫敦初版]，普林斯頓：普林斯頓大學出版社，2001 年新版。葉 223。此事的原始記載見（注 2）奧斯貝克，《中國與東印度航行紀》，葉 355。

11　見：Caroli Linnaeus, *Philosophia Botanica*, Stockholm: Godofr Kiesewetter; Amsterdam: Z. Chatelain, 1751, p. 163. 林奈，《植物哲學》，斯多哥爾摩：克哲威特出版社；阿姆斯特丹：查特覽出版社，1751 年，葉 163。 *Linnaeus' Philosophia Botanica*, Trans. Stephen Freer. Oxford: Oxford University Press, 2003, p. 167. 《林奈的《植物哲學》》，司蒂芬•弗瑞爾英譯，牛津：牛津大學出版，2003 年，葉 167。

12　"Varlden samlas I Uppsala for att hylla Linne,"*GODMORGON: Uppsala*, Tisdag 16 Maj 2006, p. 7. Han-liang Chang, Taiwan:"Jubileet blir ett tillfalle att visa vordrand for den store grundaren av modern systematik och lara av mina kollegor fran hela varlden. Jag vill ocksa ta chanson att forska for mitt project om komparativ systematic, som omfatta Linne.　Darwin och den kinesiske naturforskaren Li Sjizhen fran 1500-talet." 《早安，烏普撒拉！》,2006 年 5 月 16 日星期二第 7 葉，張漢良與域外另三人訪問稿。本人不識瑞典語，乍見翻疑夢，僅能從自撰的英文原稿還原，略謂林奈是現代分類學開山祖。我為了包括李時珍和達爾文的比較系統學研究而來到烏普撒拉，參于林奈 300 年盛會云云。

13　Carolus Linnaeus, "Benefit of Travelling, &c." In Linnaeus et ali, *Miscellaneous Tracts Relating to Natural History Husbandry and Physick*. Trans. B. Stillingfleet. London: J. Dodsley, 1775. Reprint. New York: Arno, 1977，3-35. p. 5. 林奈，〈論旅遊之益〉,《自然史及農業、醫學論文合集》，斯逖陵福立特英譯，倫敦：道斯立出版社，1775 年。紐約：阿爾諾出版社景印本， 1977 年，葉 5。林奈的這段話已成名言。參見：James L. Larson, *Reason and Experience: The Representation of Natural Order in the Work of Carl von Linné*, Berkeley: University of California Press, 1971. 詹姆斯•拉爾森，《理性與經驗：林奈著作中的自然秩序再現》，柏克萊：加州大學出版社，1971 年。

14　李時珍，《本草綱目》，景印文淵閣四庫全書，子部 79，醫家類。臺北：商務印書館，1986 年。

出席國際學術會議心得報告

計畫編號	NSC 95-2411-H-002-013
計畫名稱	自然歷史與自然系統的文本初探：林奈、達爾文、李時珍(2/3)
出國人員姓名 服務機關及職稱	張漢良教授　台灣大學外國語文學系暨研究所
會議時間地點	九十七年六月七日至九日
會議名稱	Symposium on the Languages of Science in the Time of Linnaeus
發表論文題目	Calendar and Aphorism: A Generic Study of Carl von Linné's *Fundamenta Botanica* and *Philosophia Botanica*

一、緣起

二〇〇七年是瑞典植物學家林奈出生三百週年紀念，瑞典全國以及當年其任教的烏普薩撒拉大學籌畫並舉辦一整年的紀念活動，當中包括多項學術會議。今年六月七日至九日此大學之語言學院承辦林奈時代的科學語言國際研討會(Symposium on the Languages of Science in the Time of Linnaeus)，巧合的是二〇〇六年二月本人當選為倫敦林奈學會院士，正計畫於今年五月二十四日在年會上接受入會儀式，於是利用國科會移地研究之便，由倫敦經紐卡索轉赴瑞典出席此次會議。

二、參加會議經過

本次會議歷時三天，於烏大語言學院舉行，發表論文四十餘篇。與會學者分別來自十六個國家，會議以大會發言及分組討論方式進行。本人於六月八日週五上午十一點五十分至十二點二十五分宣讀論文"Calendar and Aphorism: A Generic Study of Carl von Linné's Fundamenta Botanica and Philosophia Botanica"，本人出席各場次會議並參與討論，議程以及論文請參見附件一、二。

三、心得與建議

林奈為科學史上具深遠影響力之人物，其雙重命名法為學界沿用至今。就語言學歷史而言，其具相當中重要的地位。其所處的時代是一個語言激盪的時代，科學用語仍然承襲中世紀以及文藝復興的傳統，使用新拉丁文。但是，文學創作以及日常用語已屬於國語或方言的天下，並逐漸跨越到科學語言領域，這也正是各國成立國家級科學院，推廣並發揚國語的時代。到底拉丁文的命運如何，有無繼續存在的價值，是當時所有人關心的問題。林奈對拉丁文最大的貢獻就是他規範並統一了植物學拉丁文，他的主要學術論著全部以拉丁文寫就，但是，另一方面，其創作卻是以母語瑞典文完成，因此本次主辦單位歸畫出兩大方向：第一為拉丁文做為科學以及學術語言的實際運用情況；第二為瑞典國語在林奈學術創作生涯中所扮演的角色。本人聆聽學者之論文並參與討論，獲益匪淺，同時也不盡感慨。在國內，新拉丁文的教學，除了生命科學以及醫學院稍有實踐，在研究方

面幾乎是一片空白。如果不諳拉丁文對瞭解西方文化以及學術是相當困難的事，希望國內鼓勵此方向之學術教育與研究。

附件一：議程

I Panel on Carolus Linnaeus and his time

1 Linnaeus as an author and scientist

Plenary Lecture 1, Thursday:

Gunnar Broberg, **Lund:** Linnaeus, scientist or man of letters?

Section papers, Thursday:

- Bo Ralph, Göteborg: Linnaeus as a connecting-link in Swedish language history
- Henrik Williams, Uppsala: Linnaeus and the rune-stones
- Yngve Sandhei Jacobsen, Trondheim: Crossing the Borders of Literature: *Iter Lapponicum 1732*
- Astrid Surmatz, Amsterdam, Linnaeus in Lapland – Language and Subjectivity

Section papers, Friday

- Ann-Mari Jönsson, Uppsala: Linnaeus's International Correspondence. The Spreading of a Revolution
- Leif Feltenius, Uppsala: The Correspondence between Linnaeus and Burman. Linnaeus's Colloquial Language
- Han-liang Chang, Taipei: Calendar and Aphorism: A Generic Study of Carl von Linné's *Fundamenta botanica* and *Philosophia botanica*
- Mats Rydén, Uppsala: Linnaeus and the Swedish Plant Names

2 The writing of Linnaeus' disciples

Section papers, Saturday

- Rut Boström, Uppsala: Evidence of 18th century colloquial scientific language in the disciple Andreas Sparrman's correspondence to Linnaeus
- Kenneth J. Knoespel, Atlanta: Linnaeus and Language Laboratory of the Siberian Expeditions: Translating Political Empire into a Kingdom of Knowledge

3 The reception of Linnaeus in different countries

Section papers, Friday

- Palmira Fontes da Costa, Lisbon: The Linnaean Language of Nature in Eighteenth-century Portugal
- Mariann Juha, Munich: The construction of national scientific languages: the reception of Linneaus's mineral classification system in Hungary

- Tamás Nótári, Budapest: Reception of Linné in the Hungarian Literature of the 19th Century

4 Contemporary scientists

Section papers, Thursday

- György Szabados, Szeged: Latin, as a language of the sciences in Hungary during the 18th century
- Maria Berggren, Uppsala: Scientific discourse in Emanuel Swedenborg's medical work
- Sonja Schreiner, Vienna: Neolatin Physics – Made in Austria: Literature and Science in Gottlieb Leopold Biwald's *Physica Generalis* and *Physica Particularis*

Section papers, Friday

- Hans Aili, Stockholm: Peter Artedi and his *Ichthyologia*. A Translation Project
- Ana Carneiro, Ann Simões & Maria Paula Diogo, Lisbon: Languages of Exile: Correia da Serra (1751-1823) and the Idioms of Botany
- Kriszina Rábai, Szeged: From *Morbus Gallicus* to *Lues Venerea* (The history of Syphilology from Aloysius Luisinus' collection to Jean Astruc's collection)

II The Wallenberg Panel on the Development of Scientific Discourse.

1 The forming of scientific communities in the 18th century

Plenary Lecture 2, Thursday:

*Ulf Teleman***, Lund:** The Swedish Academy of Sciences: language policy and language practice

Plenary Lecture 3, Thursday:

*Charles Bazerman***, Santa Barbara, USA:** Church, State, and the Printing Press: conditions for autonomy of scientific publication in early modern Europe

Section papers, Thursday

- Toon van Houdt, Leuven: Money and Market. A case Study on the Development of Latin Economic Terminology and Discourse in 18th-Century Sweden
- Anna Helga Hannesdóttir, Göteborg: From Vernacular to National Language – Swedish Language Planning in the Time of Linnaeus
- Richard Sörman, Uppsala: George Louis Leclerc de Buffon: science and natural language
- Birgit Eaker, Lund: Collecting, recording and ordering. The modern dictionary begins to take form

2 The language situation: Latin, Greek and modern languages

Plenary Lecture 4, Friday:

Yasmin Haskell, **Perth, Australia**: Advancement of Science or Self-Promotion? A Dutch Doctor's 'Grand Tour' in Latin Verse

Section papers, Friday

- Hans Helander, Uppsala: The changing Roles of Latin in the 18th century
- Louis-Joan Lemmer, Leiden, & Koel Martens, Brussels: The Language of Science in Ancient Mesopotamia: an analogy with the scientific language of Linnaeus and its rise in biological classification
- Gunilla Gren Eklund, Uppsala: Philology in 18th Century Europe and Sweden

Plenary lecture 5, Friday

Jean François Battail, **Linköping:** Entre souci d´universalité et considérations patriotiques – langues en concurrence au siècle de Linné

Section papers, Friday

- Michael Martin & Stefanie Zaun, Düsseldorf: Uroscopic Texts in the French and German Vernacular: Paradigm Shifts and the Evolution of the Medical Lexicon
- Lars Wollin, Åbo: Latin decline –Retreat and comeback. Latin in Swedish professional discourse
- Lars-Gunnar Larsson, Uppsala: Holmberger's Saami Word list
- Krister Östlund, Uppsala: Languages in Swedish dissertations 1600-1850

3 The development of scientific discourse

Plenary lecture 6, Saturday

Alan G. Gross, **St Paul, USA**: The Division of Semiotic Labor in Scientific Communication: Antoine Lavoisier's Geology

Section papers, Friday

- Göran Rydén, Uppsala/Gävle: Descriptions of Technology and Technological Change in the Age of Linnaeus
- Britt-Louise Gunnarsson, Uppsala: The linguistic construction of scientificality in early articles in Swedish
- Renata Schellenberg, Mount Allison: Overwriting Convention: Scientific Literacy in Eighteenth Century Germany

Section papers, Friday

- Ellen Valle, Åbo: Constructing knowledge, constructing power: Discourse hybridity in eighteenth-century correspondence in natural history
- Robin Straaijer, Leiden: Hedging in Eighteenth-century scientific English: the case of Joseph Priestley
- Andreas Nord, Stockholm: The reflective cultivator? Model readers in 18th century Swedish garden literature

- Roderick W. Mc Conchi: George Motherby's A New Medical Dictionary; or, general repository of physic, 1775: Medical curiosity or lexicographical advance?

Plenary lecture 7, Saturday

Päivi Pahta, Jyväskylä, Finland: Eighteenth-century medical texts and discourses on reproduction

Section papers, Saturday

- Begoña Crespo Garcia & Paula Lojo Sandino, Coruña: English scientific discourse in the 18th century: the use of the passive voice
- Inés Lareo & Isabel Moskowich, Coruña: Comparison 'made possible': collocation of *make* plus adjective in 18th century Science and Fiction
- Maria Jose Esteve Ramos & Ines Lareo Martin, Coruña: Scientific registers in the 18th century: the case of *make-collocation* in the *Coruña Corpus*

5 Lexicon and Nomenclature

Section papers, Saturday

- Philippe Selosse, Lyon: From theory of succedaneum to theory of ideas: nomenclature as a point of view on the world
- John Considine, Alberta: The lexicography of ancient Greek and the eighteenth-century languages of science

附件二：論文

'Calendar and Aphorism: A Generic Study of Carolus Linnaeus' *Fundamenta Botanica* and *Philosophia Botanica*'

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Abstract:

It is a critical commonplace that Carolus Linnaeus has two incongruous faces (Lindroth 1994). Scholars have extended this self-contradiction to the other aspects of his life and career, including the diversity of his research methods and writings. If one examines and compares Linnaeus' classification method used in *Systema Natura*, which in general follows the Aristotelian-Porphyrian *a priori* logic, and his exclusive use of the device of aphorism to complete the pre-ordained empty calendar, either in *Philosophia Botanica* or in its earlier version of *Fundamenta Botanica*, one would notice a conspicuous generic contradiction. Whereas Linnaeus' classification is deductive and systematic, his calendars, along with his travelogues, are random and

sketchy, discursive but inconclusive, characteristic of the essayistic and aphoristic writings of the Renaissance, in particular those by Francis Bacon (1561-1626).

Perhaps there is no coincidence that the *Oxford English Dictionary* (online 2nd ed. 1989), in its entry to *aphorism*, gives a few sample sentences, one of which is by the English essayist Bacon and the last one referring to Linnaeus.

> **1605** BACON *Adv. Learn.* I. v, Knowledge, while ... in aphorisms and observations…is in growth.
>
> **1879** De Quatrefages *Hum. Spec.* 50 The aphorism ...which was formulated by Linnæus in regard to plants.

The second citation may not be able to do justice to Linnaeus because his *Philosophia Botanica* and *Fundamenta Botanica* had already been published more than a century. But there is apparently a genre tradition linking Bacon to Linnaeus, crisscrossing many other writers on natural history and natural philosophy during the seventeenth and eighteenth centuries. This genre convention is a secondary modeling system, or subcode, if you like, superimposed on the primary modeling system of Latin or such natural languages as English, Dutch and Swedish.

Its classical analogues notwithstanding, the Renaissance aphorism is a literary device popularized by Bacon in his *Novum Organum* (1620), being in many ways a counter-design against the Aristotelian Organum. As its subtitle suggests, the text uses aphorisms to deal with Nature and Man, and Bacon uses this specific fragmentary form to advance his method of reasoning against classical syllogistic logic. In an earlier work of his, *The Advancement of Learning* (1605), Bacon defines and defends the use of aphorism and by so doing lays the foundation for this genre. A century later, the Dutch physician Hermann Boerhaave (1668-1738) published his medical manual, *Aphorismi de Cognoscendis et Curandis Morbis* (1709), written entirely in aphorisms. This serves the triple function of alluding to the oldest medical aphorism attributed to Hippocrates, evoking its immediate model of Bacon, and anticipating the calendar writings of Linnaeus who, curiously enough, adopts another classical genre of natural writings, the floral or botanical calendar which dates back to Theophrastus and has been popular throughout the centuries. Even regarding this calendar genre, critical opinion divides as to whether Linnaeus follows the ancient tradition or a more immediate religious genre of Lutheran Almanac (Koerner 1999: 40-41).

This paper attempts to study Linnaeus' two texts on natural history/philosophy, *Fundamenta Botanica* and *Philosophia Botanica* in terms of the afore-described intricate relationship of genre traditions. It argues that the seemingly contradictory use of two discrete genres fully serves his doctrine that Nature studies rely on the two poles of human faculties, reason and experience (Linnaeus 1977 [1775]).

Keywords

Linneaus, aphorism, Francis Bacon, rhetoric, calendar

It is a critical commonplace that Carolus Linnaeus has two incongruous faces (Lindroth 1994, Chang 2005). Scholars have extended this self-contradiction to other aspects of his life and career, including the diversity of his research methods and writings. One could, for example, compare Linnaeus' classification method used in *Systema Natura*, which is encoded in scientific Latin and follows closely the Aristotelian-Porphyrian *a priori* logic, and his travel writings, which are written in Swedish and characterized by narrative randomness and occasional bursts into lyricism. Even through English translation – with, Alas! little Latin and less Swedish, one could still suspect a conspicuous stylistic inconsistency. What we are dealing with here is not only the author's linguistic code as the primary modeling system, consisting of the lexical, syntactic and semantic aspects, but also the many stylistic and generic devices, which are built on top of the base linguistic code to form his secondary modeling system. For such conceptualization, we subscribe to the discovery and descriptive procedures proposed by the Tartu-Moscow School of Semiotics in the 1970s (Lotman 1977, Lotman and others 1973).

A truly exceptional case is Linnaeus' *Philosophia Botanica* (1751), developed from the prototypal *Fundamenta Botanica* (1736), in which the author makes exclusive use of the discursive device of aphorism to complete the pre-ordained empty calendar. Whereas Linnaeus' classification is deductive and systematic, his calendars, along with his many travelogues, are random and sketchy, discursive but inconclusive, characteristic of the essayistic and aphoristic writings of the Renaissance, in particular those by Francis Bacon (1561-1626). Now there are visibly two genres fused in the text of *PB*, namely, calendar and aphorism. Both genres, marginal as they may seem, can be traced back to classical antiquity and were revived, with various semantic and cultural investments, in the Renaissance. Their relationship cannot be one between form and content, because aphorism is a form in itself. What can be said is that without rich semantic investment, a calendar, for all its rigid 365 daily divisions, remains an empty form, and it takes the protean aphorism to materialize. We shall therefore take a quick glance of calendar as genre.

The *OED* gives two definitions of *calendar*.[1]

> 1. The system according to which the beginning and length of successive civil years, and the subdivision of the year into its parts, is fixed; as the Babylonian, Jewish, Roman, or Arabic calendar.
>
> 2. A table showing the division of a given year into its months and days, and referring the days of each month to the days of the week; often also including important astronomical data, and indicating ecclesiastical or other festivals, and other events belonging to individual days. Sometimes containing only facts and dates belonging to a particular profession or pursuit, as *Gardener's Calendar*, *Racing Calendar*, etc. Also a series of tables, giving these facts more fully; an almanac.

Compared with the *OED*, the less authoritative Merriam-Webster Dictionary gives ironically definitions more relevant to our purpose.

> 1. A system for *fixing* the beginning, length, and divisions of the civil year and *arranging* days and longer divisions of time (as weeks and months) in a definite order;
>
> 2. An orderly list': as 'a list or schedule of planned events or activities *giving* dates and details. (Emphases mine.)

Only in this sense of non-prescribed acting (i.e., 'fixing' and 'giving') by individuals can calendar be a kind of writing -- literary or otherwise; and only in this sense of textualization can it exemplify the act of genre praxis, of *beinhalten*, or 'filling content into form' at any historical moment.

As suggested by the *OED*, there are specialized calendars traceable to classical antiquity but popularized in the Renaissance, e.g., the shepherd's calendar; the farmer's or gardener's calendar; the floral [not the florist's] calendar. Under the influence of classical pastoralism, a number of British poets have produced works of the same title, *The Shepherd's Calendar*, from the sixteenth to the nineteenth centuries, namely, Edmund Spenser (1552-1599), James Hogg (1770-1835), and John Clare (1793-1864). The farmer's/gardener's calendar has perhaps an older history, attributed to Hesiod's (fl. 8th century BCE) *Works and Days*. Aristotle's disciple Theophrastos (372-287 BCE), a philosopher-botanist like Linnaeus, contributed to the genre with his *De causis plantarum* and *De historia plantarum*. He was followed by the Roman Vergil (70-19 BCE) in the latter's didactic poetry *Georgics*. Finally, we have come to the calendar of flora. Linnaeus' English translator, Benjamin Stillingfleet, identifies the genre in Theophrastos' *De historia plantarum*, to which he adds that by Alexander M. Berger (Linnaeus), dated 1755, and his own of the same year. (Linnaeus, 1977 [1775], Heller 1983, 215-6).[2]

It is Stillingfleet who renders justice to calendar by granting the sterile form a

prestigious genre status. In an essay entitled *The Calendar of Flora, Swedish and English*, published together with his translations of the Linnaean miscellaneous tracts in 1755, Stillingfleet defines what he means by the calendar of flora: '…and that time [the right time] may not be according to certain calendar days, but according to a hitherto unobserved calendar, which varies several weeks in different years.' (1977 [1791] 235) He observes that the calendar existed long time ago, in Hesiod's time, 'but when artificial calendars came into vogue the natural calendar seems to have been totally neglected, for I find no traces of it after his [Hesiod's] time.' (235) Therefore, he calls for a revival of the genre, and illustrates it with his own calendar as follows:

> I have retained the division of months according to budding, leafing, flowering, &c … But I am convinced that this method marks more precisely when we may expect the flowering of any plant, or the return of any bird, &c. than the bare mention of the day of a common calendar month, and at the same time marks it more universally. (244-5)

There is no coincidence that Linnaeus' *A Tour in Lapland* makes use of both kinds of mechanical and natural calendars, the one prescribed whilst the other composed through observation.

> *May* 12, 1732, old style
>
> I set out alone from the city of Upsal on Friday May 12, 1732, at eleven o'clock …
>
> At this season Nature wore her most cheerful and delightful aspect, and Flora celebrated her nuptials with Phoebus. (1971 [1811] 2)

Stillingfleet's description shows an important pragmatic function of the calendar of flora. Much as in keeping journals, based on lived experience and quotidian observations, the writer does not aim at self-communication, as is the case of keeping a private diary; rather, he means to communicate what he has observed and recorded to fellow-naturalists, often across national borders, for comparative research. A question can be posed in this connection: Are Linnaeus' *FB* and *PB* floral calendars? If not, what are they? On the surface, Linnaeus' *FB* and *PB* retain one feature of the mechanical calendar, i.e., its numeral and numerical symbolism of 365, and the author inserts into the given 365 textual spaces his learned and speculative aphorisms, though not entirely based on observations of Nature, such as he insists at the end of *PB*: *In scientia Naturali* / *Principia veritatis* / *Observationibus confirmari debent* (In natural science / the elements of truth / ought to be confirmed by observation) (Linnaeus 2003, 307). At least here, between the two poles of human faculties for Nature studies, it is reason rather than experience that prevails.

What about the other genre, aphorism? Perhaps there is no coincidence that the

OED (online 2nd ed. 1989), in its entry to *aphorism*, gives a few sample sentences, one of which is by the English essayist Bacon and the last one referring to Linnaeus.[3]

> **1605** BACON *Adv. Learn.* I. v, Knowledge, while ... in aphorisms and observations…is in growth.
>
> **1879** DE QUATREFAGES *Hum. Spec.* 50 The aphorism ...which was formulated by Linnæus in regard to plants.

The second citation belongs to the English translation of Jean Louis Armand de Quatrefages de Bréau's (1810-92) *L'Espèce humaine* (1877). It may not be able to do justice to Linnaeus because his *PB* and *FB* had already been published for more than a century. But there is apparently a genre tradition linking Bacon to Linnaeus, crisscrossing many other writers on natural history and natural philosophy during the seventeenth and eighteenth centuries, including, as we shall see, Joachim Jung (1587-1657), Hermann Boerhaave (1668-1738), and Christian Gottlieb Ludwig (1709-73). This genre convention is a secondary modeling system (or subcode) superimposed on the primary modeling system of Latin or such vernaculars as English, Dutch and Swedish.

Did, as De Quatrefages said, Linnaeus 'formulate' aphorisms in regard to plants? Who are his predecessors? The term was first used in the *Aphorisms* (400 BCE) of Hippocrates (ca. 460-368 BCE), which is a series of propositions concerning the semeiology of disease and the art of curing. The opening aphorism is a most famous quote:

> Life is short, the Art long, opportunity fleeting; experiment treacherous, judgment difficult. The physician must be ready, not only to do his duty himself, but also to secure the co-operation of the patient, of the attendants and of externals. (Hippocrates 1992 [1931], 4: 99.)

Another collection of medical aphorisms is Hermann Boerhaave's *Aphorismi de cognoscendis et curandis morbis*, published in Leiden, 1709. In a few years, it was translated into English as *Boerhaave's Aphorisms, Concerning the Knowledge and Cure of Diseases* and published in London, 1715 (Boerhaave, 1986 [1715]). Several anecdotes can be evoked to establish the two writers' *rapports de fait*. In June 1735, at the University of Harderwijk, Linneaus took his degree examination, which included 'an exposition of two of Hippocrates' *Aphorisms*' (Blunt 2001, 94). Shortly afterwards, on 5 July 1735, Linnaeus met Boerhaave, nicknamed 'Hippocrates Redivivus' (Blunt 96), from whom Linnaeus learned much 'that was to be valuable to him in later life.' (Blunt 97). The English biographer Blunt continues his narration: That winter, Linnaeus stayed with Johannes Burman who 'assisted with two books on which he was working at the time – his *Fundamenta Botanica* and *Bibliotheca Botanica*.' (Blunt 100)

One can surmise Linnaeus' indebtedness from his extensive use of Boerhaave in annotating his *PB*. In the opening, he quotes from Boerhaave to annotate his Aphorism 3.

> *Boerh. Hist. 3*. Planta est corpus organicum, alteri cuidam corpori Cohaerens per aliquam partem sui, per quam Nutrimenti & Incrementi & Vitae materiam capit & trahit.
>
> (*Boerhaave, Historia 3*. 'A plant is an organic body, adhering to some other body by some part of itself, through which it draws the matter for nourishment, growth and life.') (Linnaeus 2003: 9)

The same Aphorism 3 is glossed by two other writers' aphorisms. The late William T Stearn (1966: 30), President of the Linnean Society of London, who supervised many translation and research projects on Linnaeus, comments on an earlier work, Joachim Jung's *Isagoge Phytoscopica* (1678) as such: 'His work is thus very formal in character, consisting of aphorisms …' It is to a definition in this work that Linnaeus compares his own definition of plant.

> Jung. Isagog. c.1. Planta est corpus vivens [vivum] non sentiens, s. [Sive est] [corpus] certo loco aut certae sedi affixum, unde nutriri, augeri, denique se propagare potest.
>
> (*Jung, Isagoge Ch. 1*. 'A plant is a living body without feeling, fixed in a particular place or abode from which it can receive nourishment and growth and eventually propagate itself.') (2003: 9)

The third writer of aphorisms is Christian Gottlieb Ludwig, author of a title identifying its generic belonging: *Aphorismi botanici* (1738), a work published only two years later than *Fundamenta Botainca*. There is evidence that Ludwig had read Linnaeus' *Systema Natura*. But here Linnaeus, in glossing Aphorism 3, refers to another title of Ludwig's:

> *Ludwig. veget. 3.* Corpora naturalia eadem semper Forma & Loco-motivitate praedita appellantur *Animalia*; eadem semper forma, sed locomotivitate destituta *Vegetabilia*; & quae diversam formam obtinent *Mineralia* dicuntur.
>
> (*Ludwig, Vegetabile 3.* 'Natural bodies, that are always provided with the same shape and with locomotion, are called *animals*; those that keep the same shape but are without locomotion, are called vegetables; and those that are subject to variations in shape, *minerals*.') (2003, 9)

He does refer to *Botanical Aphorisms* when defining botany:

> *Ludwig. aphor.* 1. Botanica est scientia vegetabilium, s. cognitio eorum, quae per plantas & in plantis fiunt.

(*Ludwig, Aphorismi 1.* 'Botany is the science of vegetables, to wit, the investigation of the things that are done by plants and in plants.') (2003,10)

Linnaeus may have borrowed the form from Boerhaave, but more likely he didn't. The classical legacy of Hippocrates being very much around and the Greek writer's work a required reading for all the physicians, Jung's *Isagoge Phytoscopica* and Ludwig's *Aphorismi botanici* bear good evidence that this genre dominated the medical discourse of the time. A standard joke in my field of comparative literature runs like this: One does not need to read a Petrarchan sonnet to write a Petrarchan sonnet. The reason is self-explanatory. Such form as aphorism has become a common property, indeed an anterior textual space in which people write with ease, echoing or emulating one another. Such earlier collections serve the triple function of, firstly, alluding to the oldest medical aphorisms attributed to Hippocrates, then evoking, unwittingly perhaps, their theoretical articulation in Bacon, and finally anticipating the calendar writings of Linnaeus who, as we have discussed, adopts another classical genre of natural writings, the floral or botanical calendar which dates back to Theophrastus and has been popular throughout the centuries. Even regarding this calendar genre, critical opinion divides as to whether Linnaeus follows the ancient tradition or a more immediate religious genre of Lutheran Almanac (Koerner 1999: 40-41).

What is aphorism? The *OED* gives two definitions.

1. A 'definition' or concise statement of a principle in any science.
ex. **1664** POWER *Exp. Philos.* III. 190 The old and uncomfortable Aphorism of our Hippocrates.
2. Any principle or precept expressed in few words; a short pithy sentence containing a truth of general import; a maxim.
ex. ***c*1590** MARLOWE *Faustus* i. 19 Is not thy common talk sound aphorisms?

Why has aphorism as genre not received much critical attention? Boerhaave, in his preface to the Reader, describes it as 'a Stile adapted entirely to the Subject; not with the Elegance of the Augustaean Age' (1715 [1986] A4). As late as 1968, the German-American comparative literature scholar Ulrich Weisstein could still note aphorism's belated reception as a genre concept.

> …the theory of literary genres is also charged with circumscribing and defining such marginal forms as are often excluded from the realm of belles letters. We think, for example, of the essay, the biography, and the autobiography and, among the miniature forms, the maxim, the aperçu, the aphorism, the Character (*caractère*), and perhaps even the Romantic

> fragment--many of which forms are just beginning to gain a measure of scholarly recognition. (Weisstein 1973 [1968], 109.)

In terms of its brevity in expression, basically on the sentential rather than the discursive level, aphorism can better be termed a form than genre, though not so 'empty' a form, i.e., to be 'in-formed', as calendar. However, this 'miniature form' or trivializing form, or, in Roman Jakobson's words, 'transitional genre', was historicized as a major formal device in the botanical and medical writings of the Renaissance Europe. What's more important, Weisstein made his comments at the time when Post-structuralist thinkers were reviving, as did their German Romantic predecessors, such minor genres as aphorism, fragment, and essay, holding that they could give form to speculative inquiry of the highest order. (Lacoue-Labarthe and Nancy, 1988; Kauffmann,1989.)

I would like to argue that the simple form of aphorism has a number of logical and semiotic functions to perform, running the gamut from definition to argument, and at the same time displaying language semiosis on both the textual and intertextual levels. Among the very few writers who consciously cultivate the logical and rhetorical power of aphorism, Bacon figures most prominently. His *Novum Organum* (1620), with a subtitle of *Aphorisms Concerning the Interpretation of Nature and the Empire of Man*, is written in aphorisms, and as such serves reflexively as a metacommentary on aphorism. The rationale of such style had been propounded fifteen years before in 1605 which saw the publication of *The Advancement of Learning*. The two texts can be therefore read as a pair: Whilst the earlier text lays the theoretical foundation, or poetics, so to speak, of aphorism, the later text provides the reader with a large scale concrete demonstration of the kind of writing the author has advanced.

Bacon introduces aphorism as the proper approach to knowledge in lieu of fixed dogma, or, in his word, 'method', because it has the advantage of growth. Where dogma closes a concept prematurely, aphorism opens it and lets it grow. He compares knowledge already set and that still in growth to young men's body:

> But as young men, when they knit and shape perfectly, do seldom grow to a further stature; so knowledge, while it is in aphorisms and observations, it is in growth: but when it once is comprehended in exact methods, it may perchance be further polished and illustrate and accommodated for use and practice; but it increaseth no more in bulk and substance. (1.5.4, 1974, 34)

Aphorism then is very much like the essay form for which Bacon is better known. Like essay, aphorism is tentative and inconclusive; it encourages and invites inquiry and participation on the part of scientific researcher. But different from essay, aphorism is noted for its brevity and precision in expression; it can be said that

aphorism is the basic or minimal structural unit of the essayistic form.

The English philosopher favours aphorism precisely for its lack of rhetorical trappings and wordiness. It is, as it were, language in minimalism!

> [F]or aphorisms, except they should be ridiculous, cannot be made but of the pith and heart of sciences; for discourse of illustration is cut off: recitals of examples are cut off; discourse of connexion and order is cut off; descriptions of practice are cut off. So there remaineth nothing to fill the aphorisms but some good quantity of observation: and therefore no man can suffice, nor in reason will attempt, to write aphorisms, but he that is sound and grounded. (2.17.7, 1974, 135-6)

Now a question arises from this anti-rhetoric stance: If aphorism is the kernel of discourse and by the very nature of language it does grow, but growing in what, if not in language, and to what, if not to full-fledged discourse? Maybe Bacon has taken a bad move by using a linguistic unit, namely, the sentence, to represent the Renaissance man's inquisitive mind. The fact is whilst he believes he is referring to the linguistic form, he is actually talking about the message transmitted by that form, that is, language's basic representational function. This 'short, pithy sentence' is to begin with a grammatical concept, and when reified, it can serve as the vehicle of a statement, a definition or a proposition, depending on how and when language is used, as discourse or in logic. One could compare excerpts from the English translations of Hippocrates, Bacon, and Boerhaave to arrive at the conclusion that the seemingly fragmentary aphorisms, when articulated in discourse, perform all the functions which regular declarative sentences or constative utterances do.[4] In fact, Bacon's aphorisms in *Novum Organum* tend to become longer and longer as the author's argument develops, so that if the numeral headings were taken off, the work would read just like an extended treatise.

It seems that our exploration into aphorism as a style concept has come to a theoretical and pragmatic impasse. Perhaps there is another kind of aphorism which is less discursive and rhetorical, suitable to botanical representation, as exemplified above by the cross-references among Jung, Boerhaave, Ludwig, and Linnaeus, despite the fact they are all definitional. This kind of aphorism is the language used in botanical diagnoses and descriptions (Stearn 1966, 143ff). Whether a plant's characters are differential or essential, the wording for them must be lexically and syntactically concise and precise. John Lindley (1799-1865)'s description of the language used for such purposes can be the kind of alternative 'economical' aphorism we have in mind: 'differential characters express in the least possible space the distinctions between plants; <u>they should contain nothing superfluous</u>'; and '[t]he *essential* character of a plant expresses…those peculiarities known by experience to

be most essential to it; but admits nothing unimportant or superfluous…' (qtd in Stearn 1966, 143. Italics original; underlining mine.) The epitome of this kind of writing is no doubt Linnaeus who 'devoted much thought to the drafting of these diagnostic phrases' and 'held that these diagnoses should not exceed twelve words in length' (Ibid, 144).

For a book claiming to be 'philosophy', then there must be two types of aphorism: Type A, that for argumentation in the domain of philosophical discourse; Type B, that for definition, diagnosis, and description befitting a manual. The following two aphorisms qualify as Type B.

> 79. Vegetabilium (78) PARTES, primum a Tyrone distinguendae, sunt III: *Radix, Herba,* Fructificatio.
>
> (79. 'The PARTS of vegetables [78], that must be distinguished by the beginner, are Three: the *root*, the *herb*, and the *fruit-body*.) (2003, 50, 53)
>
> 127. COMPOSITI (117) flores implentur (121) vel Petalis tubulatis vel planis.
>
> (127. 'COMPOUND flowers [117] are filled up [121] either by tubular petals or by flat ones.') (2003, 95)

They are in sharp contrast to the polemical propositions in Type A as follows.

> 19. PHILOSOPHI (18) Scientiam Botanicam demonstrative ex principiis rationalibus in formam scientiae reduxerunt; ut *Oratores* (20), *Eristici* (21), *Physiologi* (22), *Institutores* (23).
>
> (19. 'The PHILOSOPHERS [18, by demonstration from rational principles, have reduced botanical knowledge to the form of a science: for instance, *rhetoricians* [20], *controversialists* [21], (*physiologist* [22]) and *legislators* [23].') (2003, 21. The parenthesized part is missing in Freer's English translation.)
>
> 20. ORATORES, (19) quaecunque Scientiam docte ornant, proposuerunt.
>
> (20. 'The RHETORICIANS [19] have expounded all things that are learned Ornaments of science. (2003, 21)
>
> 365. Oeconomicus Usus plantarum generi humano utilissimus est.
>
> Usus plantarum pro *Oeconomia universali naturae* sedulo indagandus.
>
> In scientia Naturali
>
> Principia veritatis
>
> Observationibus confirmari debent.
>
> (365. 'THE ECONOMIC use of plants is of great utility to the human race.

The use of plants for the *Universal Economy of Nature* should be assiduously researched.

In natural science
the elements of truth
Ought to be confirmed by observation.') (2003, 307)

This leads us to our final question. How does Linnaeus structure his text, save the mechanic numeral of 365 and the numbering of aphorisms accordingly? As Aphorisms 19 and 20 indicate, there is the technique of enchainment (*enchaînée*), with 20 referring back to 19 and forward to 21, thus forming an interlocking chain. The immediately interlocked aphorisms often show semantic and syntactic continuity, corresponding to the numerical linearity. Following Saussure's conceptualization of language structure in binary opposition, we may call such sections syntagmata; in fact, each aphorism constituting a syntagm in itself. There is an in-built coherence among the elements forming a syntagm and in their *mise-en-scène*. Aphorism 7 on the Botanist identifies him as the Collector (8) and Methodizer (18); Aphorism 8 on the Collector refers to him simultaneously as the Father (9), Commentator (10), Illustrator (11), Describer (12), Monographer (13), the Meticulous (14), Adonise (15), Compiler (16) and Traveller (17). When these are introduced, each in his turn, they are likewise mutually referred to. This textual practice on the part of the author provides the reader with guidance to infinitely repeatable synoptic reading.

Furthermore, the instances of 7 and 8 suggest another order of relationships: they point to the linguistic signs *in absentia* in the aphorism under consideration, but *in praesentia* as paradigms within the lexicon of the text. The same textual practice goes beyond an individual work, in search of intertextual resonances (cf. Todorov 1982). The annotations of an aphorism and the references to other similar parallels outside the text of *PB*, such as the aphorisms by Jung, Boerhaave, and Ludwig, evoked to illuminate Aphorism 3 (See above), suggest the existence of a larger textuality which inscribes and informs the Age of Linnaeus.

Notes

[1] The citations from the *OED* and the *Merriam-Webster*, especially of the definitions of aphorism later in the paper are aimed to elaborating on the semiosic distinction of dictionary and encyclopaedia outlined by Eco 1976, 1984. To me, no other example than aphorism can serve more powerfully as a metacommentary to examine the distinction. The current online edition of *Encyclopedia Britannica* bases its entry to aphorism on the 11th edition which in turn bases on the *OED*. See n. 3 below.

[2] Apparently Stillingfleet takes the author of the dissertation to be Alexander M. Berger, a student of Linnaeus', but with historical hindsight, contemporary scholars generally agree to attribute these dissertations supervised by Linnaeus to him rather

than to the students who submitted and signed because of the special supervision system used in Sweden at the time. See Knut Hagberg's (1939) and Stearn's (1957) comments quoted in Heller 1983, 216, n. 13.

[3] Ephraim Chambers' (1680 ca.-1740) *Cyclopædia* enters the term in volume 1, dated 1728, but it does not cite Linnaeus for apparent chronological reason.

[4] Perhaps ironically to Bacon, in aphoristic writing, all kinds of Aristotelian syllogism are used. I suspect the rhetorical enthymeme is not uncommon. For a discussion of Hippocratic semiosis and abduction, see Manetti, 1993, 47-8.

The following excerpts are respectively taken from the three authors under discussion.

Bacon, *Novum Organum*, 2000 (1620) [The numbers follow those of the original order of aphorisms.]

(1) Man, being the servant and interpreter of Nature, can do and understand so much and so much only as he has observed in fact or in thought of the course of nature. Beyond this he neither knows anything nor can do anything.

(2) Neither the naked hand nor the understanding left to itself can effect much. It is by instruments and helps that the work is done, which are as much wanted for the understanding as for the hand. And as the instruments of the hand either give motion or guide it, so the instruments of the mind supply either suggestions for the understanding or cautions.

(3) Human knowledge and human power meet in one; for where the cause is not known the effect cannot be produced. Nature to be commanded must be obeyed; and that which in contemplation is as the cause is in operation as the rule.

Boerhaave, *Practical Aphorisms*, 1986 (1715) 1-2

(1) Whatever State of the Human Body doth disorder the Vital, the Natural, or even the Animal Functions of the same is call'd a *Disease*.

(2) And that part of the Science or Art of Physick, which teacheth how to find out the Disease actually afflicting the Patient, and how to cure the same, is called *The Practice of Physick*.

(3) Whosoever therefore is unacquainted with what is requisite to perform well all vital, natural and animal Functions; and consequently is ignorant of the Causes of Life and Health; can never discern and know rightly the Defects, that is, the Diseases of them.

(4) A *Cure* therefore is the *Changing* of a Disease into Health: and consequently supposes a Knowledge of what is just now mentioned (3.) and consequentlythe Knowledge and the Cure of Diseases require the Knowledge of those Doctrines which expound what it is, which is strictly termed *Life* and *Health* in Man, *viz.* the Institution of Physick, or the Animal OEconomy, or the Theory of Physick.

Hippocrates, *Aphorisms*. 1992, 4: 105.

(1) Old men endure fasting most easily, then men of middle age, youths very badly, and worst of all children, especially those of a liveliness greater than the ordinary. (Book I, XIII)

(2) Growing creatures have most innate heat, and it is for this reason that they need most food, deprived of which their body pines away. Old men have little innate heat, and for this reason they need but little fuel; much fuels puts it out. For this reason too the fevers of old men are less acute than others, for the body is cold. (Book I, XIV)

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