

The World Data Center on Microorganisms

Life Science Research Information Section

RIKEN

2-1 Hirosawa, Wako, Saitama 351-01, JAPAN **Hideaki Sugawara**

I. INTRODUCTION

It is our common understanding that biological materials like microorganisms, tissue and cell cultures, seeds, plants and animals are inevitable resources for the development of science and technology. Culture collections which are reservoir of biological materials now occupy a central position in life sciences and biotechnology. The World Data Center of Microorganisms (WDC) is a infrastructure of culture collections in the world realizing quick and smooth exchanges of information and microorganisms to support research and development in those fields.

The WDC was relocated from University of Queensland in Australia to our institute RIKEN in 1986. This article introduces a function for WDC in RIKEN (RIKAGAKU-KENKYUUSHO, the Institute of Physical and Chemical Research).

2. A SHORT HISTORY OF WDC

In 1966 specialist of culture collections met in Paris sponsored by UNESCO to discuss the promotion of the activities of culture collections worldwide. At the end of the meeting they recommended the preparation of comprehensive directory of culture collections in the world. The recommendation was followed by the IAMS Section on Culture Collections, which later became the World Federation for Culture Collections (WFCC).

A survey on culture collections was actually started by Dr. Martin of the National Research

Council of Canada and succeeded by Professor V.B.D. Skerman in University of Queensland in Brisbane, Australia. Their efforts resulted in the first edition of the World Directory was published (John Wiley and Sons, Int., New York) in 1972. The University of Queensland became the World Data Centre to maintain and update the Directory on computer. In 1982, the second edition of the World Directory was published by the WDC with the support of UNESCO, FAO, WHO, UNU, UNIDO, UNEP and the EEC.

In 1984 at the fifth International Congress of Culture Collections in Bangkok WFCC officially reaffirmed the WDC as a component of WFCC and thus the WFCC's responsibility for the operation and management of the WDC. In 1986 WFCC decided to transfer WDC to a new host institution, RIKEN based on the evaluation of the proposals tendered by potential hosts.

WDC as a center of WFCC has to:

- (1) publish a directory of culture collections in the world, and
- (2) produce species-oriented directories.

Of course, WDC will carry out other tasks if resources are available.

3. STRUCTURE OF WDC

The Life Science Research Information Section (LSRIS) in RIKEN is the acting host of WDC. The Japan Collection of Microorganisms (JCM) in RIKEN supports WDC as well. The following personnels are associated with WDC operations at RIKEN:

- (1) Director
Dr. Kazuo Komagata (replaced by Dr. T. Nakase on April 1st, 1989)
- (2) Staffs
Drs. Hideaki Sugawara and Y. Ugawa
Mrs. K. Kaneuchi, Miss Y. Takishima
- (3) Supporting organizations
JCM, JFCC and its members.
WFCC, MSDN, UNESCO, UNEP, MIRCEN

The WDC exchanges information with culture collections and scientists with the following communication media:

- (1) mail (RIKEN, Wako, Saitama 351-01, JAPAN)
- (2) telex (02962818 RIKEN J)
- (3) telephone (+81-484-66-6181)
- (4) facsimile (+81-484-64-5651)
- (5) floppy disks in IBM format
- (5) magnetic tapes in IBM format
- (6) electric mail (Dialcom: 42:CDT0007, 7014: RKN601)
- (7) online (DTE address: 44014384135)
- (8) publication

4. DATA CONTENTS OF WDC

The WDC maintains two databases called CCINFO and STRAIN. The database CCINFO contains 35 data items on the location, structure and activities of each culture collection. With the database STRAIN, you are able to locate culture collections which preserve strains which you need. In the databases, information of 327 culture collections in 55 countries and 50,000 strains are stored.

When you access the databases, you are not charged for the usage of the computer in WDC but charged for the usage of communication lines like making a telephone call. The details of the databases is introduced in the appendix.

5. SUMMARY

By use of WDC, you can find culture collections which may help your research by providing

materials, identification services, training courses and so on. To update the databases WDC start a survey on culture collections and received responses from 270 culture collections in the world including KCTC (Korean Collection for Type Cultures), KAIST.

The WDC is ready to help you and welcome your support for the updating and expansion of WDC database which will promote the activities of culture collections.

APPENDIX: WDC DATABASES

1. How to connect to WDC database

The WDC database is accessible internationally. Its identification number in the international networks is 44014384135. You are able to use your personal computers (PC) and telephone line for the access.

1) Communication Route

```

your PC --- modem ---
                    --- your domestic PSS ---
international PSS --- VENUS-P ---
DDX-TP --- RIKEN

```

The PSS is packet Switching System which realizes reliable and effective data flow. The VENUS-P and DDX-TP are PSS by Japanese companies. In many countries, you have to get password from your PSS before you ask your password of WDC.

2) Parameters of Communication

- 300 bps or 1200 bps
- half duplex or full duplex
- ASCII (IA5)
- 7 information bits and 1 parity bit
or
8 bits nonparity

(The first upper bit of the 8 bits is ignored in DDX-TP)

These parameters are to be set by a software package for the telecommunication which you use on your PC.

3) A Procedure for the Connection

- a) call 44014384135 when you are on your PSS.

b) send BREAK signal* after receiving either
COM or COM 44014384135

* The BREAK signal can be sent, for example, by hitting END-key in the case of CROSS-TALK.

c) hit RETURN key when You receive a bell sound.

d) enter your user identification and password of WDC when you see the message of "ENTER USER ID" on your screen.

2. Example of the session

```
COM
XWA1010I  ENTER USER ID
user-id/password
 1 IRIS      : IRIS
 2 SYSTSS   : LOGON TSS
 3 WDC      : WORLD DATA CENTER
XWA1015I  SELECT WORK NUMBERS
```

3. ?????????

```
*****WORLD DATA CENTER*****
E : EXIT
S : SEARCH (FAIRS-I)
M : LEAVE MESSAGES TO THE OPERATOR.
N : READ CENTER NEWS.
    INPUT: s
```

```
*****
* PLEASE SELECT A DATABASE.          *
* SELECT <DATABASE>                  *
*****
```

```
LISTING OF AVAILABLE DATABASE (S)
CCINFO STRAIN
RS> select ccinfo
+ FAR0024 ENTER SECURITY CLASS
NAME-Dxxxx
+ FAR003A ENTER PASSWORD FOR
2271-Dxxxx
RS show element
LISTING OF 35 ELEMENT(S)
REGISTRATION NUMBER(REG#)
CORRESPONDENT(CORR)
```

```
INSTITUTION NAME(INST)
COUNTRY(COUN)
HOST DIRECTOR(HDIR)
STATUS(STAT) *
DIRECTOR(DIRE)
NUMBER OR STAFFS(STA#)
MAIN SUBJECTS(MAINS)
CULTURE HELD(CULT)
CATALOGUE(CATA)
COMPUTER AVAILABILITY (CAVI)
STORAGE SERVICE(STOR)
IDENTIFICATION(IDEN)
CONSULTATION(CONS)
DATA SUBMITTER(SUBM)
DATE OF ENTRY(DENT)
KEYWORD(KW)
ACRONYM(ACRO)
FULL NAME(FULL)
ADDRESS(ADDR)
MAIL NUMBERS(MAIL)
HOST ADDRESS(HOST)
SPONSORS(SPON)
CURATORS(CURA)
COMPUTER SPECIALIST(COMP)
SUBCOLLECTIONS(SUBC)
AVAILABILITY OF CULTURES(AVAI)
COMPUTERIZED CATALOGUE (CCAT)
PATENT DEPOSITS(PATE)
DISTRIBUTION(DIST)
TRAINING(TRAI)
OTHER SERVICES(OSER)
DATE OF REPLY(DREP)
SERIAL NUMBER(SER#)
```

```
RS > search country brazil
MASTER SEARCH IN PROGRESS
10 FOUND. $1 SAVED.
RS>out element (corr, acronym, full, address)
```

```
#1
Correspondent Dr. Vanderlei Perez Canhos
Acronym      FTPT
Full name    Tropical Culture Collection
Address      Latino Coelho, 1301
              Campinas
```

Sao Paulo

#2

Correspondent Dr. Julio Rodrigues Neto

Acronym IBSBF

Full name Culture Collection of Phytobacteriology Section

Address Cx. Postal 70
Campinas
Sao Paulo
13.100

Full name Colecao de Estirpes de Rhizobium spp.

Address Av. Barao de Itapura 1481
Campinas
Sao Paulo

#3

Correspondent Mrs. Berenilda Ramalho de Mello

Acronym UFPEDA

Full name Universidade Federal de Pernambuco

Address Rua Prof. Morais Rego, s/n
Recife
Pernambuco
50.739

RS> search iden yeast@
MASTER SEARCH IN PROGRESS
34 FOUND. \$2 SAVED.

RS select strain
+ FAR002A ENTER SECURITY CLASS
NAME-Dxxxx
+ FAR003A ENTER PASSWORD FOF 5885-Dxxxx

RS serach name lactobac^o
921 FOUND. \$1 SAVED.

RS> out rec(1) el(reg#, name)

#1
Registration number
1

Scientific name
Lactobacillus acidophilus

RS> select ccinfo
+ FAR002A ENTER SECURITY CLASS
NAME-Dxxxx
+ FAR003A ENTER PASSWORD FOR 1465-Dxxxx

RS> search reg#1
MASTER SEARCH IN PROGRESS
1 FOUND. \$1 SAVED.

RS> out el(all)

#1
Registration number
1

Acronym ATCC

Correspondent Mrs. Bobbie A. Brandon

Full name American Type Culture Collection

Institution name
American Type Culture Collection

--

#8

Correspondent Dr. Avilio A. Franco

Acronym BRAPA

Full name UNPNPBS

Address Km 47
Seropedica
Rio de Janeiro

#9

Correspondent Dr. Iara Godinho Kolling

Acronym SEMIA

Full name Colecao de culturas de Rhizobium do Ipagro

Address Rua Goncalves Dias, 570
Porto Alegre
Rio Grande do sul
90.060

#10

Correspondent Dr. Eli Sidney Lopes

Acronym CERS

Address	12301 Parklawn Drive Rockville Maryland 20852	Culture and preservation methods Freeze drying Medical microbiology
Country	USA	Molecular biology
Mail numbers	TEL.: 301-881-2600 TEX.: 908768, 89805 FAX.: 301-231-5826 EX. : DL-C	Plant pathology General microbiology Systematics and taxonomy Veterinary
Host director	Dr. Robert E. Stevenson	Culture held
Host address	12301 Parklawn Drive Rockville Maryland 20852 USA TEL.: 301-881-2600 TEL.: 908768 FAX.: 301-231-5826 Ex. : DL-STA	Algae (108) Bacteria (13500) Fungi (14000) Yeasts (9000) Protozoa (950) Plasmids (400) Cell lines: animal (2300) Cell lines: plant (50) Hybridomas: animal (300) Viruses: animal (1250) Viruses: plant (300) Viruses: bacteria (500)
Director	Dr. Robert Stevenson	Availability of cultures
Curators	Dr. Robert Gherna (Bacteriology) Dr. S.-C. Jong (Mycology and Botany) Dr. Pierre-Marc Daggett (Pro- tozoology and Algology) Dr. Candace Collmer (Virology) Dr. William Nierman (Molecular and Plasmid Biolog) Dr. Robert Hay (Cell Biology)	Exchange Fee Catalogue Publish own catalogue once every 4 years Computerized catalogue Yes Computer availability Available
Number of staffs	Bacteriology (13) Cell (23) Mycology (10) Protozoology (3) Virology (9) Assistants (49) Others (40)	Patent deposits Patent depositis () Storage service Storage service () Distribution Distribution () Identification
Main subjects	Agriculture Genetics Applied microbiology Genetic engineering Immunology Cell biology Industrial microbiology	Bacteria () Fungi () Yeasts () Cell lines () Training Culture and preservation methods Quality control Genetic engineering Koryotyping

	Use of computer in culture collections	(Mrs.) Bobbie A. Brandon
		Data of reply 12/18/87
Consultation	Patent deposits	Date of entry 10/14/81
	Preservation	Serial number 1
	Propagation	RS>end
	Shipment regulations	FAIRS>and
	Animal quarantine	END
	Plant quarantine	FAIRS ENDED
Data submitter		XWA1040I LOGGED OFF
	(Mrs.) Bobbie A. Brandon	