



**FIRST WORLD CONGRESS ON PAIN**

sponsored by

**INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN**

**program**

**Florence, September 5-8, 1975**



*The International Association for the Study of Pain cordially welcomes all participants to the First World Congress*

*The Organizing Committee and the Organizzazione Internazionale Congressi wish you a nice and profitable stay, and remain at your disposal to help you in all your problems.*

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**INTERNATIONAL ASSOCIATION FOR THE STUDY OF PAIN**

**PROGRAM**

Florence, September 5-8, 1975

**ORGANIZING SECRETARIAT**

Organizzazione Internazionale Congressi  
Piazza Ognissanti, 3  
50123 Florence  
Italy  
Phone: 294.301 ext. 161

**GENERAL CHAIRMAN OF THE CONGRESS  
AND CHAIRMAN OF THE COUNCIL PRO TEMPORE:**

**John J. BONICA (Seattle, U.S.A.)**

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of the  
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**GENERAL INFORMATION**

The FIRST WORLD CONGRESS ON PAIN takes place from September 5 to 8, 1975 in the Palazzo dei Congressi, Pratello Orsini, 1 (Via Valfonda) Florence

**RECEPTION OFFICE and SECRETARIAT**

The Reception Office and Secretariat will be open permanently from September 4 to 9 as follows:

September 4, Thursday	08.30 - 18.00
September 5, Friday	08.30 - 19.00
September 6, Saturday	08.30 - 19.00
September 7, Sunday	08.30 - 15.00
September 8, Monday	08.30 - 19.00
September 9, Tuesday	08.30 - 13.00

Participants are requested to present themselves at the Secretariat to obtain scientific material, bag and badge.

**BADGES**

Within the Congress area and for social events, Congress Members and their wives are invited to wear their name-tag, which will be required for entrance to the Conference halls.

Badges will show different colours:

Congress Members	: green
Accompanying Members	: blue
Organizing and Scientific Committee	: white
Exhibitors	: yellow
Hostesses	: red
Ladies Committee	: gray
Committee for Public Information	: brown

**COMMUNICATIONS ROOMS DISLOCATION**

Room « A »	- Auditorium	- (basement)
Room « B »	- Sala Onice	- (ground floor)
Room « C »	-	- (ground floor)
Room « D »	-	- (ground floor)
Room « E »	- Sala Verde	- (second floor)
Room « F »	- Belvedere	- (third floor)

**OFFICIAL LANGUAGE**

The official language of the congress will be English. Simultaneous translation into Italian will be provided in the Main Auditorium (Room « A »)

**MESSAGE CENTER**

The Message Center will be located in the Congress area, near the Secretariat.

**SLIDES CENTER**

The Slides Center will be located in the Congress area, near the Secretariat.



## OFFICES

The congressists will find in the Congress area the following offices:

BANK Cassa di Risparmio di Firenze

EXCHANGE

CLOAKROOM

LOST PROPERTY

ENTERTAINMENTS

BARS

During the Congress two bars will be open: one in the surroundings of the main Auditorium (room A) and one at the second floor, near the Green Room (room E).

On Sunday, September 7, as the scientific sessions are prolonged until 14.00 h a Snack will be offered during the intermission (10.30 - 11.00 h). Tickets will be available against request up to 19.00 of September 6, at the reception desk.

## EXHIBITION

A scientific-sanitary exhibition will be staged in Palazzo dei Congressi.

A catalogue of the exhibitors can be found in the bag distributed to the participants at the Registration Center.

## PHOTOGRAPHS

Photographs of scientific and social events will be displayed in the Congress area.

Photographs can be obtained by participants before the end of the Congress.

## SOCIAL EVENTS

A reception will be held in the City Hall (Palazzo Vecchio) of Florence, on Thursday, September 4, at 18.00.

Participants are kindly requested to arrive not later than 17.50.

Afterwards a Cocktail Party will be offered by the Mayor of Florence in the Monumental Quarters of Palazzo Vecchio.

Following the Cocktail, a folkloristic show will take place for the Congress participants.

A Social Banquet will take place at Villa Corsini di Mezzomonte on Saturday, September 6, at 20.30.

A Trip with snack into the Tuscan Chianti wine country will take place on Sunday, September 7, at 16.00 and includes a visit to S. Gimignano.

(For details see separate program).

## NOTICE TO SPEAKERS

— Each participant reading a lecture has 20 minutes. Each participant reading a communication has 10 minutes plus 5 minutes discussion.

— Before the sessions in the Room « A », each speaker will have to give the text of his paper to the interpretes, so that the simultaneous translation can be properly performed.

— The slides must be produced sufficiently in advance to the SLIDES CENTER.

Each speaker is responsible for collecting his own slides at the end of the session.

Only slides cm. 5 x 5

cm. 5 x 6 — (US size 2 x 2)

— Participants who wish to have their papers considered for publication must have a **final manuscript** at the time it is presented. Instructions on the preparation of the manuscript will be sent out by I.A.S.P. Secretariat.

— A xerocopy service will be available to participants.

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**The Committee Meeting and the Council Meeting will be held on Tuesday, September 4.**

**In addition to the Congress Workshops, Tuesday, September 9 will also include a daylong International Symposium on Cancer Pain and a half-day meetings on analgesics, pain clinic administration, methodology of analgesics evaluation and related topics.**



## S C I E N T I F I C

Friday, Sept. 5	Room « A »	Room « B »	Room « C »	Room « D »	Room « E »
09.00	Opening Ceremonies				
10.00	Keynote Lecture				
10.30	<b>Intermission</b>				
11.00	Opening Lectures				
12.40	<b>Intermission for luncheon</b>				
14.00	Film Sessions	Central Pain Pathways	Headache	Pain measurement	Peripheral Afferent Systems
15.30	<b>Intermission</b>				
16.00	Film Sessions (con't)	Central Pain Pathways (con't)	Headache (con't)		Peripheral Afferent Systems (con't)
16.30					
17.00					
17.15					
17.30	FIRST GENERAL ASSEMBLY OF I.A.S.P.				

Saturday, Sept. 6	Room « A »	Room « B »	Room « C »	Room « D »	Room « E »
09.00	Lectures				
10.30	<b>Intermission</b>				
11.00	Peripheral blocks and Pain Control	Central Pain Pathways	Analgesia by Peripheral Stimulation	Hypnosis and Pain	Spinal Cord Mechanisms
11.45				Sociologic Aspects of Pain	
12.15					
12.30	<b>Intermission for luncheon</b>				
14.00	Peripheral blocks and Pain Control (con't)	Stereotactic Procedures for Relief of Pain	Analgesia by Peripheral Stimulation (con't)		Spinal Cord Mechanisms (con't)
15.45		Central Nervous System Stimulation for the Control of Pain			
16.00	<b>Intermission</b>				
16.30	Peripheral blocks and Pain Control (con't)	Central Nervous System Stimulation for the Control of Pain (con't)	Analgesia by Peripheral Stimulation (con't)		Spinal Cord Mechanisms (con't)
17.15					
18.00					
18.15					

## P R O G R A M

Sunday, Sept. 7	Room « A »	Room « B »	Room « C »	Room « D »	Room « E »
09.00	Lectures				
10.30	Intermission				
11.00	Acupuncture	Central Nervous System Stimulation for the Control of Pain	Non-narcotic analgesic agents	Musculo-Skeletal Pain	Narcotic Analgesics
14.00	<b>Intermission</b>				

Monday, Sept. 8	Room « A »	Room « B »	Room « C »	Room « D »	Room « E »
09.00	Lectures				
10.30	<b>Intermission</b>				
11.00	Acupuncture (con't)	Psychological Factors in Pain	Trigeminal System		Narcotic Analgesics (con't)
12.30	<b>Intermission for luncheon</b>				
14.00	Acupuncture (con't)	Psychological Factors in Pain (con't)	Trigeminal System (con't)		Narcotic Analgesics (con't)
15.30	<b>Intermission</b>				
16.00		Psychological Factors in Pain (con't)	Trigeminal System (con't)		Narcotic Analgesics (con't)
17.00					
17.30	SECOND GENERAL ASSEMBLY OF I.A.S.P.				
18.30	CLOSING OF THE CONGRESS				

Tuesday, Sept. 9	Room « B »	Room « C »	Room « D »	Room « E »	Room « F »
08.30	Workshop on Taxonomy on Pain	Workshop on Pain Clinics	Workshop on Data Banks	SYMPOSIUM ON CANCER PAIN	Workshop on Role of I.A.S.P.
10.30				Intermission	
11.00				SYMPOSIUM ON CANCER PAIN (con't)	
12.30				Intermission	
14.00				SYMPOSIUM ON CANCER PAIN (con't)	
18.00					



**SCIENTIFIC PROGRAM**

Friday, September 5, 1975  
09.00-12.40

Room: A

### OPENING CEREMONIES

- 09.00 Welcome by IASP and introduction of guests  
09.10 Welcome by Florentine officials  
09.30 Introductory remarks by P. Procacci (Chairman, Local Arrangements Committee)  
09.40 Goals of IASP and Congress by J.J. Bonica (General Chairman)

### KEYNOTE LECTURE

- 10.00 « Modulation: An overview »  
P.D. WALL (London, U.K.)  
10.30 Intermission for coffee

Chairwoman: D. Albe-Fessard  
(Paris, France)

### OPENING LECTURES

- 11.00 Peripheral and spinal « pain » mechanisms and their modulation  
A. IGGO  
Department of Veterinary Physiology, University of Edinburgh, U.K.
- 11.20 Peripheral sensitisation and its central effects  
E.R. PERL  
University of North Carolina, School of Medicine, Chapel Hill, North Carolina, U.S.A.
- 11.40 Headache: disruption of pain modulation  
F. SICUTERI  
Department of Clinical Pharmacology (Headache Center Section) University of Florence, Florence, Italy.
- 12.00 Use of narcotics for pain relief  
F. F. FOLDES  
Montefiore Hospital and Albert Einstein College of Medicine, Bronx, New York, U.S.A.
- 12.20 Peripheral and central pathways for pain with reference to trigeminal system  
R. DUBNER  
Neurobiology and Anaesthesiology Branch, N I D R, N I H Bethesda, Maryland, U.S.A.
- 12.40 Intermission for luncheon



Friday, September 5, 1975  
14.00-19.00

Room: A

Chairwoman: J.G. Travell  
(Washington, U.S.A.)  
Co-chairman: G.N. Kryzhanovsky  
(Moskow, URSS)

## FILMS SESSION

- 14.00 Film « Spray and stretch for relief of pain and muscle spasm »  
J. MENNELL, J.G. TRAVELL  
George Washington University, Washington, District of Columbia, U.S.A.
- 14.40 Film « Psychosomatic diseases in surgery »  
C. KIMURA, K. TSUNEKAWA  
Department of Surgery, Ehime University, School of Medicine, Matsuyama, Japan.
- 15.00 Film and communication « Electrical acupuncture analgesia: its application in nose and sinus surgery »  
M. ONO and T. ONO  
Ono Clinic, Urawa City, Saitama P., Japan.
- 15.30 Intermission for coffee
- 15.45 Film « Cervical epidural injections. A minitechnique for the epidural administration of corticosteroids in the treatment of cervical spondylarthrosis »  
M. E. SLUIJTER  
Department of Anesthesiology, Wilhelmina Gasthuis, Amsterdam, Holland.
- 16.00 Film « Precise alcoholic injection for drug-resistant tic douloureux: technic and results »  
A. ECKER, T. PEARL  
State University of New York, Syracuse, New York, U.S.A.
- 16.30 Film « Central pain and itch syndromes: experimental study and general conception »  
G. N. KRYZHANOVSKY  
Institute of General Pathology and Pathological Physiology AMS, Moscow, URSS.
- 17.30 FIRST GENERAL ASSEMBLY OF I.A.S.P.

Friday, September 5, 1975  
14.00-17.15

Room: B

**CENTRAL PAIN PATHWAYS**  
Chairman: W.H. Sweet  
(Boston, U.S.A.)  
Co-chairman: B.R. Fink  
(Seattle, U.S.A.)

## COMMUNICATIONS

- 14.00 An outline of the anatomy of somatosensory pathways  
J. BOIVIE  
Department of Anatomy, Karolinska Institutet, Stockholm, Sweden.
- 14.20 Cerebral cortical modulation of primate spinothalamic neurons  
J.D. COULTER, R.D. FOREMAN, J.E. BEALL, W.D. WILLIS  
Departments of Anatomy, Physiology & Psychiatry and Marine Biomedical Institute, University of Texas Med. Br., Galveston, Texas, U.S.A.
- 14.40 Anatomical independence and physiological similarity of spinoreticular and spinothalamic projections in cat  
H.L. FIELDS and S.D. ANDERSON  
Departments of Neurology and Physiology, University of California, San Francisco, California, U.S.A.
- 14.55 Collateral branching of reticulothalamic projections from midbrain  
D. BOWSER  
Laboratory of Neurobiology, Department of Anatomy, University of Liverpool, Liverpool, U.K.
- 15.10 An electrophysiological investigation of the dorsal column system. Its possible role in nociception.  
D. ANGAUT-PETIT  
CNRS, INP4, 31 Chemin J. Aiguier, Marseille, France.
- 15.30 Intermission for coffee

Chairman: W.H. Sweet  
(Boston, U.S.A.)  
Co-chairman: B.R. Fink  
(Seattle, U.S.A.)

## COMMUNICATIONS

- 16.00 The human spinothalamic tract. Stimulation - mapping in the spinal cord and brainstem  
R.R. TASKER, L.W. ORGAN, I.J. ROWE, P. HAWRYLYSHYN  
Departments of Surgery, Physiology and Electrical Engineering, University of Toronto, Neurosurgical Division, Toronto General Hospital, Toronto, Canada.
- 16.15 The body representation in the anterolateral funiculus as reconstructed by percutaneous cordotomies for benign intractable pain.  
R.J. SCHNEIDER and R.L. PAUL  
Division of Neurosurgery, University of Maryland, Baltimore, Maryland and York Hospital, York, Pennsylvania, U.S.A.
- 16.30 Effects of nociceptive and innocuous stimuli on the firing patterns of single neurons in the feline nucleus reticularis gigantocellularis  
G.S. PEARL and K.V. ANDERSON  
Department of Anatomy, Emory University, Atlanta, Georgia, U.S.A.
- 16.45 The effect of nitrous oxide on evoked cellular responses in the cat nucleus reticularis gigantocellularis  
D.D. SPENCER, M. YAMASHITA, R.B. DUCKROW, L.M. KITAHATA, W.F. COLLINS Jr.  
Yale University, School of Medicine, New Haven, Connecticut, U.S.A.
- 17.00 Long term increases in nociceptive thresholds following lesions in feline nucleus reticularis gigantocellularis.  
K.V. ANDERSON and G.S. PEARL  
Department of Anatomy, Emory University, Atlanta, Georgia, U.S.A.



Friday, September 5, 1975  
14.00-16.30

Room: C

### HEADACHE

Chairman: F. Sicuteri  
(Florence, Italy)  
Co-chairman: O. Lindahl  
(Linköping, Sweden)

### COMMUNICATIONS

- 14.00 **Methods of pain modulation in chronic headache without organic findings**  
D. GROSS  
Krankenhaus Maingau vom Roten Kreuz, Niederräder Landstrasse 58, Frankfurt/Main,  
W. Germany.
- 14.15 **Possible monoamine mediation of the analgesic activity of ergotamine  
and other lysergic derivatives in migraine**  
M.D. GIOVANI, C. CURRADI, M. CATERNOLO and F. SICUTERI  
Department of Clinical Pharmacology, University of Florence, Florence, Italy.
- 14.30 **Cephalic pain in cervical arthrosis. Pathophysiological and clinical aspects**  
R. GALLETI, R. DURANTI  
Cattedra di Patologia Medica IV, Università degli Studi di Firenze, Florence, Italy.
- 14.45 **Studies on pain desensitization by histamine treatment: action of hi-  
stamine on kallikrein-kinin system**  
P.L. DEL BIANCO, F. PEDATA, B. ANSELMINI  
Department of Clinical Pharmacology, University of Florence, Clinica Medica Generale,  
Florence, Italy.
- 15.00 **An investigation into the psychogenic bases of temporomandibular joint  
myofascial pain-dysfunction**  
E.W. SMALL  
Department of Oral Surgery, The University of North Carolina at Chapel Hill, School  
of Dentistry, Chapel Hill, North Carolina, U.S.A.
- 15.15 **Deep pain threshold exploration in headache sufferers**  
M.D. GIOVANI, C. CURRADI, M. CATERNOLO and F. SICUTERI  
Department of Clinical Pharmacology - Headache Center Unit, University of Florence,  
Florence, Italy.
- 15.30 Intermission for coffee

Chairman: A. Friedman  
(Phoenix, U.S.A.)  
Co-chairman: R. Galletti  
(Florence, Italy)

### COMMUNICATIONS

- 16.00 **Hypnotic treatment of headache and vertigo in 155 skull injured**  
C. CEDERCREUTZ, R. LAHTENMAKI, J. TULIKOURA  
Sairaalan 9, 49400 Hamina, Finland.
- 16.15 **Contribution to the study of personality of patients with chronic hea-  
dache**  
J. GARCIA, W. DEMUTH and U.H. PETERS  
Neuropsychiat. Univ. Klinik 65 Mainz, W. Germany.

Friday, September 5, 1975  
14.15-15.30

Room: D

### PAIN MEASUREMENT

Chairman: C.R. Chapman  
(Seattle, U.S.A.)  
Co-chairman: M. Zoppi  
(Florence, Italy)

### COMMUNICATIONS

- 14.15 **Signal detection theory assessment of pain modulation: a critique**  
G.B. ROLLMAN  
Department of Psychology, University of Western Ontario, London, Canada.
- 14.30 **The application of Laser to a psychophysiological study of pain in man**  
A. CARMON and J. MOR  
Department of Behavioral Biology, Medical School, Technion-Israel Institute of Technology,  
Haifa, Israel.
- 14.45 **Laboratory pain induction methods for human analgesic essays**  
B.B. WOLFF, T.G. KANTOR, and P. COHEN  
Departments of Psychiatry and Medicine, New York University Medical Center, New  
York, New York, U.S.A.
- 15.00 **Diagnostic reevaluation of the cutaneous electric and capillary resisten-  
ces in men with abdominal pain**  
S. YAMAGATA, M. ISHIKAWA, A. NAGASAKI  
Tohoku University School of Medicine, Department of Internal Medicine, Sendai, Japan.
- 15.15 **What is the most unique form of dental pain stimulation?**  
D. SCOTT Jr. and R. MAZIARZ  
University of Pennsylvania, Medical School, Pennsylvania, U.S.A.



Friday, September 5, 1975  
14.00-17.30

Room: E

### PERIPHERAL AFFERENT SYSTEMS

Chairman: Y. Zotterman  
(Stockholm, Sweden)  
Co-chairman: H.E. Torebjörk  
(Uppsala, Sweden)

### COMMUNICATIONS

- 14.00 **A new method for classification of C unit activity in intact human skin nerves**  
H.E. TOREBJÖRK and R.G. HALLIN  
Department of Clinical Neurophysiology, University Hospital, Uppsala, Sweden.
- 14.15 **Studies of polymodal C receptors in conscious man**  
R.G. HALLIN and H.E. TOREBJÖRK  
Department of Clinical Neurophysiology, University Hospital, Uppsala, Sweden.
- 14.30 **Afferent C fiber activity in the human cutaneous nerve in relation to pain sensation**  
J. VAN HEES  
K.U.L., Leuven, Belgium.
- 14.45 **Nociceptors of the human skin and their chemical response**  
M.S. DASH and S.S. DESHPANDE  
Vallabhbhai Patel Chest Institute, Department of Physiology, Delhi University, Delhi, India.
- 15.00 **The influences of the algogenic substances serotonin and bradykinin on the discharges of unmyelinated cutaneous nerve fibers identified as nociceptors**  
H.O. HANDWERKER  
II, Physiologisches Institut, Universität Heidelberg, D-69 Heidelberg, Neuenheimerfeld 326, W. Germany.
- 15.15 **Pain-producing substances as stimulants for group IV afferent units from skeletal muscle**  
S. MENSE  
Physiologisches Institut der Universität, 23 Kiel, Olshausenstrasse 40-60, W. Germany.
- 15.30 **Intermission for coffee**

Friday, September 5, 1975  
14.00-17.30 (con't)

Room: E

### PERIPHERAL AFFERENT SYSTEMS

Chairman: H.O. Handwerker  
(Heidelberg, W. Germany)  
Co-chairman: R.G. Hallin  
(Uppsala, Sweden)

### COMMUNICATIONS

- 16.00 **Afferent impulses of knee joint capsule receptors caused by ischemia and thermal change**  
M. YAMADA and Y. YOSHINO  
Department of Physiology, Tottori University, School of Medicine, Yonago, Tottori 683, Japan.
- 16.15 **Irreversible selective blocking of cutaneous myelinated fibres by local heating - an experimental model of chronic pain?**  
M. ZIMMERMANN  
II Physiologisches Institut der Universität, D-69 Heidelberg Neuenheimer Feld 326, W. Germany.
- 16.30 **Differential block of cutaneous nerve fibers with triangularly shaped electrical impulses**  
N. ACCORNERO, G. BINI and M. MANFREDI  
I Clinica delle Malattie Nervose e Mentali, Università di Roma, Roma, Italy.
- 16.45 **Neurophysiological investigations of the development of nociceptors in regenerating cutaneous nerves of the cat**  
H. DICKAUS, M. ZIMMERMANN and Y. ZOTTERMAN  
II Physiologisches Institut der Universität, 6900 Heidelberg Neuenheimer Feld 326, W. Germany.
- 17.00 **The effects of sympathetic stimulation on the response of intradental receptors to chemical stimulation**  
B. MATTHEWS  
Department of Physiology (Oral Biology), University of Bristol, U.K.
- 17.15 **Can tumor pain be explained by changes in oxygen supply to nerve fibers?**  
W. ERDMANN, C. HOLCOMB, W. NIX and G. CORSSSEN  
Department of Anesthesiology, University of Alabama, School of Medicine, Birmingham, Alabama, U.S.A.



Saturday, September 6, 1975  
09.00-12.30

Room: A

Chairman: J.J. Bonica  
(Seattle, U.S.A.)

## LECTURES

- 09.00 **Neurophysiology and acupuncture**  
B. KAADA  
Institute of Neurophysiology, University of Oslo, Norway.
- 09.20 **Acupuncture: a critical view**  
A. TAUB  
Section of Neurosurgery, Yale University School of Medicine, New Haven, U.S.A.
- 09.40 **Peripheral and dorsal column stimulation for pain control**  
D.M. LONG  
Department of Neurological Surgery, The John Hopkins University School of Medicine, Baltimore, Maryland, U.S.A.
- 10.00 **Nerve blocks for diagnosis and therapy of pain.**  
J.J. BONICA  
Department of Anaesthesiology and Pain Clinic, Washington University, Seattle, Washington, U.S.A.
- 10.20 **Functional neuro-anatomy of nociception in the spinal cord**  
F.W.L. KERR  
Mayo Foundation, Rochester, Minnesota, U.S.A.
- 10.40 Intermission for coffee

## PERIPHERAL BLOCKS AND PAIN CONTROL

Chairman: R.L. Katz  
(New York, U.S.A.)  
Co-chairman: H.U. Gerbershagen  
(Mainz, W. Germany)

## COMMUNICATIONS

- 11.00 **Neural pharmacokinetics of lidocaine in vivo**  
B.R. FINK, G.M. AASHEIM and S.J. KISH  
University of Washington, Seattle, Washington, U.S.A.
- 11.15 **Effect of tetracaine and epinephrine on intrathecal second messengers cyclic AMP and cyclic GMP**  
R.C. BALAGOT, M. BILANDZIC, S. KANG, B. KWAN, V. BANDELIN and B. ECANOW  
Department of Anesthesiology, Chicago Medical School, Chicago, Illinois, U.S.A.
- 11.20 **Local anesthetics as modulators of neural information**  
G.A. CONDOURIS  
Department of Pharmacology, CMDNJ, N.J. Med. Sch., Newark, New Jersey, U.S.A.
- 11.45 **A new combination-technique for relief of post-operative pain**  
D.S.C. DEVADHAR  
115 Albion Street, Hawera, New Zealand.
- 12.00 **Clinical evaluation of subarachnoid neurolytic blocks in intractable cancer pain**  
V. VENTAFRIDDA and G. MARTINO  
Pain Therapy and Rehabilitation Department, National Institute of Tumours, Milan, Italy.
- 12.15 **Treatment of acute herpes zoster and of the postherpetic syndrome with blocks. A follow-up investigation of 378 cases**  
A.M. KLYSNER and W.H. DAM  
Bispebjerg Hospital, Copenhagen.
- 12.30 Intermission for Luncheon

Saturday, September 6, 1975  
14.00-18.00

Room: A

## PERIPHERAL BLOCKS AND PAIN CONTROL

Chairman: J. Madrid Arias  
(Madrid, Spain)  
Co-chairman: E. Black  
(Bethesda, U.S.A.)

## COMMUNICATIONS

- 14.00 **The role of nerve block in the treatment of cancer pain**  
M. KIYOHARA and H. YAMAMURA  
Pain Clinic, Department of Anesthesia, University Tokyo Hospital, Tokyo, Japan.
- 14.15 **Dissociation of cold, warm and hot sensibility during ulnar nerve block and surface anesthesia**  
H. NOLTE, H. RADTKE, H. FRUHSTORFER, U. PFAFF, M. ZENZ  
Institute of Anesthesiology, County and Municipal Hospitals, Minden, W. Germany.  
Institute of Physiology, University of Marburg, W. Germany.
- 14.30 **Phenol into posterior fossa for the treatment of facial and oral pain**  
G. MARINI and F. GIUNTA  
Department of Neurosurgery, Brescia, Italy.
- 14.45 **Management of intractable pain by nerve block with phenol**  
L.F. COMELLI and A. GASPARETTO  
Department of Anesthesiology and Intensive Care Unit, University of Rome, Medical School, Rome, Italy.
- 15.00 **Regional anesthesia as a psychotherapeutic method: a new approach to the psychic system (an experimental study)**  
H.P. TÜRK, R. FREY and H.U. GERBERSHAGEN  
University of Mainz, W. Germany.
- 15.15 **The duration of sympathetic blockade following peridural anesthesia with different local anesthetic agents**  
T.M. MURPHY, L.E. MATHER, M. d'A. STANTON-HICKS and J.J. BONICA  
Department of Anesthesiology, Anesthesia Research and Pain Clinic, University of Washington, School of Medicine, Seattle, Washington 98195 U.S.A.
- 15.30 **The efficacy of stellate ganglion block in producing sympathetic blockade of the upper extremity**  
T.M. MURPHY, J.E. CHARLTON and P. GREGORY  
Department of Anesthesiology, Anesthesia Research and Pain Clinic, University of Washington, School of Medicine, Seattle, Washington 98195 U.S.A.
- 15.45 **Role of sympathetic system in reflex dystrophies**  
P. PROCACCI, F. FRANCCINI, M. ZOPPI, M. MARESCA and L. GIOVANNINI  
Cattedra di Terapia Medica Sistemica e Cattedra di Fisiologia Generale, University of Florence, Florence, Italy.
- 16.00 Intermission for coffee



Saturday, September 6, 1975  
14.00-18.00 (con't)

Room: A

### PERIPHERAL BLOCKS AND PAIN CONTROL

Chairman: F.J. Molina  
(Buenos Aires, Argentina)  
Co-chairman: V. Ventafridda  
(Milan, Italy)

### COMMUNICATIONS

- 16.30 **New technical approaches to sympathetic nerve blocks and measurement of their effectiveness in volunteers and pain patients**  
H.U. GERBERSHAGEN, H. BRECHER, D. MÜLLER, N. MÜLLER-SUUR,  
C. SCHENK, R. SCHWARZ and D. THEISS  
University of Mainz, W. Germany.
- 16.45 **An improved technique of permanent percutaneous lumbar sympathectomy**  
R.A. BOAS, V.S. HATANGDI and E.G. RICHARDS  
Department of Anaesthetic and Pain Clinic, Auckland Hospital, Auckland, New Zealand.
- 17.00 **Nerve block and chronic pain**  
M. SWERDLOW  
Salford Pain Relief Clinic, Salford, U.K.
- 17.15 **A new method of treatment of occipital neuralgia by radiofrequency denaturation**  
H.G. BLUME  
Department of Neurosurgery, University of South Dakota, U.S.A.
- 17.30 **Accuracy of needle placement during diagnostic and therapeutic nerve block**  
T. BRECHNER and V. BRECHNER  
UCLA School of Medicine, Center for the Health Sciences, Department of Anesthesiology,  
Los Angeles, California, U.S.A.
- 17.45 **Comparison of intercostal block and petidine for postoperative pain**  
P. GAUTHIER-LAFAYE, C. DEVAUX, D. FRANCKHAUSER  
Department of Anaesthesiology, CHU 67005 Strasbourg, France.

Saturday, September 6, 1975  
11.00-12.30

Room: B

### CENTRAL PAIN PATHWAYS

Chairman: R.R. Tasker  
(Toronto, Canada)  
Co-chairman: K.L. Casey  
(Ann Arbor, U.S.A.)

### COMMUNICATIONS

- 11.00 **Some observations on modulation of CM, MGmc and their efferent fibers in relation to sensory inputs**  
R. KURODA, K. KOSHINO, Y. TAKIMOTO and H. MOGAMI  
Department of Neurosurgery, Osaka University, Med. School, Osaka, Japan.
- 11.15 **Evaluation of sensory responses to electrical stimulation during stereotaxic procedures**  
J.A. TAREN and P. TUCKER  
University of Michigan Medical Center U.S.A.
- 11.30 **Central perception of temperature: suggestions of a thalamic site in man**  
D.E. RICHARDSON and H. AKIL  
Louisiana State University, School of Medicine, New Orleans, Louisiana, U.S.A.  
Stanford University, School of Medicine, Palo Alto, California, U.S.A.
- 11.45 **Pain and itch syndromes of central origin: experimental study and general conception**  
G.N. KRZYZHANOVSKY  
Institute of General Pathology and Pathological Physiology AMS, Moscow, USSR.
- 12.00 Intermission for Luncheon



Saturday, September 6, 1975  
14.00-18.15

Room: B

### STEREOTACTIC PROCEDURES FOR RELIEF OF PAIN

Chairman: R. Hassler  
(Frankfurt/M., W. Germany)  
Co-chairman: C.A. Pagni  
(Milan, Italy)

#### COMMUNICATIONS

- 14.00 Position control by thalamic evoked somatosensory potentials and micro-electrode spikes.  
W. UMBACH, T. FUKUSHIMA  
Neurochirurgische Klinik, Freie Universität, Berlin, W. Germany.
- 14.15 Experimental and clinical studies of thalamic pulvinotomy for intractable pain  
N. YOSHII and Y. KUSHIDA  
Division of Neuro-Surgery, Toho University, School of Medicine, Tokyo, Japan.
- 14.30 Nociceptive neurons in the human posterior hypothalamus. Report of 20 consecutive cases of stereotaxic postero-medial hypothalamotomy for relief of intractable pain  
K. AMANO, H. SEKINO, K. SANO  
Japan.
- 14.45 Neurophysiological basis for hypothalamic lesion and stimulation by chronic implanted electrodes for the relief of intractable pain in cancer  
D. FAIRMAN  
Cancer Research Institute, University of Buenos Aires, Argentine.
- 15.00 The mode of action by which pituitary alcohol injections relieves pain  
J. MILES and S. LIPTON  
Regional Department of Medical and Surgical Neurology, Walton Hospital, Liverpool, U.K.
- 15.15 Neuroadenolysis (chemical hypophysectomy) for diffuse unbearable cancer pain  
G. MORICCA  
Istituto Regina Elena for Cancer Research and Therapy, Rome, Italy.
- 15.30 Human evoked responses to noxious tactile stimulation: an interim report  
H. STOWELL  
Research Division, Sensory Neurophysiology, Central Georgia Regional Hospital, Milledgeville, Georgia, U.S.A.

Saturday, September 6, 1975  
14.00-18.15 (con't)

Room: B

### CENTRAL NERVOUS SYSTEM STIMULATION FOR THE CONTROL OF PAIN

Chairman: D.M. Long  
(Minneapolis, U.S.A.)  
Co-chairman: J. Gybels  
(Leuven, Belgium)

- 15.45 Inhibition of primate spinothalamic tract neurons by electrical stimulation of dorsal column or peripheral nerve  
R.D. FOREMAN, J.E. BEALL, J.D. COULTER and W.D. WILLIS  
Departments of Anatomy, Physiology and Psychiatry and Marine Biomedical Institute, University of Texas Med. Br., Galveston, Texas, U.S.A.
- 16.00 Intermission for coffee
- 16.30 Modulation of nociceptive responses in the thalamic posterior group of nuclei  
W.K. DONG and I.H. WAGMAN  
Department of Animal Physiology, University of California, Davis, California, U.S.A.
- 16.45 The effect of electrical stimulation of the brainstem on the response of cat spinothalamic neurons to natural hindlimb stimuli  
D.B. McCREERY and J.R. BLOEDEL  
Department of Neurosurgery, University of Minnesota, Minneapolis, Minnesota, U.S.A.
- 17.00 The modulating mechanism of the thalamic relay nucleus stimulation upon the nociceptive thalamic neuron  
T. TSUBOKAWA, H. NISHIMOTO, A. KOTANI and N. MORIYASU  
Department of Neurological Surgery, School of Medicine, NIHON University, Itabashi-Ku, Tokyo, Japan.
- 17.15 The action of the neocerebellum on ascending somatosensory pathways  
H. BANTLI and J.R. BLOEDEL  
Department of Neurosurgery, University of Minnesota, Minneapolis, Minnesota, U.S.A.
- 17.30 Cerebral modulation of neuronal excitability in the cuneate nucleus of the macaque monkey  
S.J. JABBUR, F.A. HARRIS, M.A. BIENDENBACH, R.W. MORSE and A.L. TOWE  
Department of Physiology and Biophysics, School of Medicine, University of Washington, Seattle, Washington, 98105 U.S.A.
- 17.45 Mechanoceptive and nociceptive thresholds during dorsal column stimulation in man  
U. LINDBLOM and B.A. MEYERSON  
Department of Neurology, Huddinge Sjukhus and Department of Neurosurgery, Karolinska Sjukhuset, Stockholm, Sweden.
- 18.00 Evoked potential study of dorsal column stimulation  
Y. HOSOBUCHI  
Department of Neurosurgery, University of California, School of Medicine, San Francisco, California, U.S.A.



**ANALGESIA BY PERIPHERAL STIMULATION**

Chairman: F.W.L. Kerr  
(Rochester, U.S.A.)  
Co-chairman: T.M. Murphy  
(Seattle, U.S.A.)

**COMMUNICATIONS**

- 11.00 A history of local electrical analgesia**  
A. TAUB and K. KANE  
Yale University, School of Medicine, New Haven, Connecticut, U.S.A.
- 11.15 Blocking of A $\delta$  tooth pulp afferents with anodal current**  
L. VYKLIČKY, O. KELLER and P. JASTREBOFF  
Institute of Physiology, Czechoslovak Academy of Sciences, Prague, Czechoslovakia and  
Nencki Institute of Experimental Biology, Warsaw, Poland.
- 11.30 Influence of transcutaneous neural stimulation on the pain threshold of human teeth**  
J.M. MUMFORD  
School of Dental Surgery, University of Liverpool, Liverpool, U.K.
- 11.45 Treatment of chronic pain by means of peripheral electrical stimulation**  
P. PROCACCI, M. ZOPPI, M. MARESCA, F. FRANCCINI and L. GIOVANNINI  
Cattedra di Terapia Medica Sistemica e Cattedra di Fisiologia Generale, Università di Firenze, Italy.
- 12.00 Prolonged relief of pain by brief, intense somatic stimulation**  
R. MELZACK and M.E. JEANS  
Departments of Psychology and Psychiatry and Pain Treatment Clinic of the Montreal General Hospital, McGill University, Montreal, Quebec, Canada.
- 12.15 Relief of chronic pain by transcutaneous stimulation. Analysis of 100 consecutive failures**  
J.A.V. BATES  
National Hospital, London, U.K.
- 12.30 Intermission for Luncheon**

**ANALGESIA BY PERIPHERAL STIMULATION**

Chairman: R.G. Black  
(Seattle, U.S.A.)  
Co-chairman: M.R. Dimitrijevic  
(Ljubljana, Yugoslavia)

**COMMUNICATIONS**

- 14.00 Somatosensory changes during transcutaneous electrical analgesia**  
R.J. IGNEZI and R.A. STERNBACH  
Pain Unit, Veterans Administration Hospital, San Diego, California U.S.A. and School of Medicine, University of California, San Diego, California, U.S.A.
- 14.15 Modulation of first and second pain by peripheral stimulation and by psychological set**  
D.D. PRICE, J.W. HU, and J.J. BARRELL  
Neurobiology and Anesthesiology Branch, NIDR, NIH, Beth. MD. and Department of Psychology, University of Florida, Gainesville, Florida, U.S.A.
- 14.30 Peripheral nerve stimulation for pain relief: its effect on cutaneous peripheral nerve evoked activity**  
J.K. NYQUIST and R.J. IGNEZI  
Division of Neurosurgery and Pain Unit, Veterans Administration Hospital, University of California, School of Medicine, San Diego, California, U.S.A.
- 14.45 Transcutaneous neural stimulation for chronic pain syndrome in spinal cord injured patients**  
R.S. BOSWELL, and R.K. TIWARI  
Spinal Cord Injury Service, V.A. Hospital, Long Beach, California, U.S.A.
- 15.00 Transcutaneous stimulation for the evaluation and treatment of post-traumatic neuralgia**  
P.R. WEINSTEIN and L.B. SACHS  
University of California Medical Center, Department of Neurosurgery and Department of Psychology, S.F. Veterans Administration Hospital, San Francisco, California, U.S.A.
- 15.15 The influence of transcutaneous nerve stimulation on chronic, intractable pain**  
N. MÜLLER-SUUR, R. FREY, H.U. GERBERSHAGEN, C. PANHANS and D. WEITZ  
University of Mainz, W. Germany.
- 15.30 Modification of subjective responses to thermal stimuli by electrical stimulation: an evaluation using signal detection theory**  
J.R. BLOEDEL, D.B. McCREERY and D.L. ERICKSON  
Department of Neurosurgery, University of Minnesota, Minneapolis, Minnesota, U.S.A.
- 15.45 Characteristics of some afferent inflows with pain suppressing effect**  
M.R. DIMITRIJEVIC, J.V. TRONTELJ, B.L. GALLOWAY, J. CANZONERI, M. JANKO, T.S. PREVEC and W.B. MCKAY  
Department of Clinical Neurophysiology, Texas Institute for Rehabilitation and Research, 1333 Moursund Ave., Houston, Texas 77025, U.S.A. and Institute of Clinical Neurophysiology, The University Hospital, Zaloška cesta st. 7, 61105 Ljubljana, Yugoslavia.
- 16.00 Intermission for coffee**



Saturday, September 6, 1975  
14.00-18.00 (con't)

Room: C

### ANALGESIA BY PERIPHERAL STIMULATION

Chairman: D.D. Price  
(Bethesda, U.S.A.)  
Co-chairman: P. Procacci  
(Florence, Italy)

#### COMMUNICATIONS

- 16.30 **Electrical stimulation in arteriosclerotic vascular disease of the lower extremities**  
B. RUTKOWSKI, T. NIEDZIALKOWSKA and J. OTTO  
Clinic for Pain Relief and Cancer Surgical Clinic, Institute of Oncology, Gliwice, Poland.
- 16.45 **Effects of vibration on pain in spinal cord injury patients**  
J.V. TRONTELJ, M.R. DIMITRIJEVIC, B.L. GALLOWAY, J. FAGANEL and M. GREGORIC  
Department of Clinical Neurophysiology, Texas Institute for Rehabilitation and Research, 1333 Moursund Ave., Houston, Texas, U.S.A. Institute of Clinical Neurophysiology, The University Hospital, Zaloska cesta st. 7, 61105 Ljubljana, Yugoslavia.
- 17.00 **Vaginal stimulation blocks pain responses in rats: neurophysiological and behavioral evidence**  
B.R. KOMISARUK  
Institute of Animal Behavior, Rutgers University, Newark, New Jersey, U.S.A.
- 17.15 **Hypalgesia induced by electric cutaneous and subcutaneous stimulation in the rabbit**  
Y. YAMAGUCHI, T. TSUJIMOTO and H. MORI  
College for Biomedical Engineering and Nursing, Osaka University and Department of Psychiatry, Osaka University Medical School, Machikaneymacho Toyonakashi, Osaka, Japan.
- 17.30 **Experiences with transcutaneous stimulator**  
P. PRITHVI RAJ and S.J. MONTGOMERY  
Department of Anesthesia, Wadsworth, V.A. Hospital Center, Los Angeles, California, U.S.A.  
Department of Anesthesia, University of Texas Southwestern Medical School, Dallas, Texas, U.S.A.
- 17.45 **Differential changes in response to laboratory pain induction following transcutaneous electrical nerve stimulation**  
A.F. BATTISTA and B.B. WOLFF  
Medical School, New York, New York, U.S.A.  
Department of Neurosurgery and the Department of Psychiatry, New York University

Saturday, September 6, 1975  
11.00-12.15

Room: D

### HYPNOSIS AND PAIN

Chairman: M.T. Orne  
(Philadelphia, U.S.A.)  
Co-chairman: T.G. Kantor  
(New York, U.S.A.)

#### COMMUNICATIONS

- 11.00 **Hypnosis in the modulation of pain**  
G.W. FAIRFULL SMITH  
342 Kilmarnock Road, Glasgow, G43 2DO, Scotland, U.K.
- 11.15 **Pain and hypnosis - Observations on hypnotic analgesia in a surgical operation**  
L. CHERTOK, D. MICHAUX and M.C. DROIN  
Hypnosis Laboratory, Centre Dejerine - 64, rue du Rocher, Paris 8e - France.
- 11.30 **Responses to painful stimuli during animal hypnosis**  
G. CARLI, F. FARABOLLINI and G. FONTANI  
Istituto di Fisiologia Umana, Università di Siena, Siena, Italy.

### SOCIOLOGIC ASPECTS OF PAIN

Chairman: M.T. Orne  
(Philadelphia, U.S.A.)  
Co-chairman: T.G. Kantor  
(New York, U.S.A.)

- 11.45 **Social and environmental factors in the experience of pain**  
E. O'DONNELL-ALVELDA, S.F. BRENA and F.R. CRAWFORD  
Emory University, Atlanta, Georgia, U.S.A.
- 12.00 **Social modelling determinants of pain processes**  
K.D. CRAIG  
Department of Psychology, The University of British Columbia, Vancouver, B.C., Canada  
V6T 1W5.



### SPINAL CORD MECHANISMS

Chairman: L. Vyklicky  
(Prague, Czechoslovakia)  
Co-chairman: M.C. Smith  
(London, U.K.)

### COMMUNICATIONS

- 11.00 Inhibition of nociceptor-driven dorsal horn neurones in the cat**  
A. IGGO, H. OGAWA and F. CERVERO  
SRC Somatosensory Research Group, Department of Veterinary Physiology, University of Edinburgh, Edinburgh EH9 1QH, U.K.
- 11.15 Bradykinin as a tool in neurophysiological studies of pain mechanisms**  
G. GUILBAUD, D. LE BARS and J.M. BESSON  
Laboratoire de Physiologie des Centres Nerveux, Université Pierre et Marie Curie, 4, Avenue G. Bennett, 75016 Paris, France.
- 11.30 Response properties of dorsal horn cells to noxious and nonnoxious stimuli in the spinal rat**  
G.J. GIESLER Jr., D. MENETREY and J.M. BESSON  
Laboratoire de Physiologie des Centres Nerveux, Université Paris VI, 4 Avenue G. Bennett, 75016 Paris, France.
- 11.45 Characteristic patterns of spontaneous single unit activity in the laminae of the dorsal horn of the cat**  
A. TAUB, L.M. KITAHATA, K. GAUZI-SAIDI, M. YAMASHITA and R.B. DUCKROW  
Yale University, School of Medicine, New Haven, Connecticut, U.S.A.
- 12.00 Effects of halothane on single unit activity of Rexed laminae VII and VIII cells**  
M. YAMASHITA, L.M. KITAHATA, K. GHAZI-SAIDI, A. TAUB and W. CHANG  
Yale University School of Medicine, New Haven, Connecticut, U.S.A.
- 12.30** Intermission for luncheon

### SPINAL CORD MECHANISMS

Chairman: A. Iggo  
(Edinburgh, U.K.)  
Co-chairman: L.M. Kitahata  
(New Haven, U.S.A.)

### COMMUNICATIONS

- 14.00 Correlation between the inhibition of impulse transmission and the increased extracellular potassium in the spinal cord produced by peripheral stimulation**  
L. VYKICKY, E. SYKOVA, N. KRIZ  
Institute of Physiology, Czechoslovak Academy of Sciences, Prague Czechoslovakia.
- 14.15 Extracellular K<sup>+</sup> accumulation and modulation of sensory transmission**  
M.E. MORRIS and K. KRNJEVIC  
Department of Research in Anaesthesia, McGill University, Montreal, Canada.
- 14.30 Presynaptic inhibitory action in man**  
K. SHIMOJI, M. MATSUKI, M. MARUYAMA, K. MASUKO, Y. ITO, T. IWANE, R. TAKAHASHI  
Department of Anaesthesiology, Niigata 951, Japan.
- 14.45 Cells in the spinal cord and the medulla oblongata projecting to the thalamus in the monkey demonstrated with the horseradish peroxidase method**  
D. ALBE-FESSARD, J. BOIVIE, G. GRANT and A. LEVANTE  
Department of Anatomy, Karolinska Institute, Stockholm, Sweden and Laboratoire de Physiologie des Centres Nerveux, Université de Paris VI, Paris, France.
- 15.00 Retrograde cell changes in human spinal cord after anterolateral cordotomies. Location and identification after different periods of survival**  
M.C. SMITH  
The National Hospital for Nervous Diseases, Queen Square, London, WC1N 3BG, U.K.
- 15.15 Evaluation of central and peripheral pain mechanisms by nociceptive flexion reflex in man**  
J.C. WILLER, N. BATHIEN and A. HUGELIN  
Laboratoire de Physiologie, Faculté de Médecine, U.E.R. Saint-Antoine, 27, Rue Chaligny, 75012 Paris, France.
- 15.30 Differential effects of cutaneous nerve fibers (myelinated and unmyelinated) on monosynaptic reflex of the cat**  
N. ACCORNERO, G. BINI, G.L. LENZI, M. MANFREDI  
I<sup>a</sup> Clinica delle Malattie Nervose e Mentali, Università di Roma, Rome, Italy.
- 15.45 Phantom pain: relief by focal destruction of substantia gelatinosa**  
B.S. NASHOLD Jr., D.S. ZORUB, B. URBAN  
Duke University Medical Center, Durham, North Carolina, U.S.A.
- 16.00** Intermission for coffee
- 16.30 Selective spinal posterior rhizotomy for the surgery of pain**  
M. SINDOU, G. FISCHER, L. MANSUY  
Service de Neurochirurgie du Professeur Mansuy, Hôpital Neurologique, 59, Bd Pinel, 69003 Lyon, France.
- 16.45 Alterations in pain conduction influenced by changes in oxygen supply to neuronal tissue**  
W. NIX, W. ERDMANN, C. HOLCOMB, G. CORSSSEN, N. CAPRA and J. HALSEY Jr.  
Department of Anaesthesiology and Department of Neurosurgery, the University of Alabama, School of Medicine, Birmingham, Alabama, U.S.A.
- 17.00 Microsurgical lumbo-sacral ganglionectomy: technique, anatomic rationale, and surgical results**  
C.P. OSGOOD, M. DUJOVNY and R. FAILLE  
Department of Neurosurgery, University of Pittsburgh, School of Medicine, Pittsburgh, Pennsylvania, U.S.A.



Sunday, September 7, 1975  
09.00-14.00

Room: A

Chairman: P.D. Wall  
(London, U.K.)

## LECTURES

- 09.00 **Spinothalamic system: physiological aspects**  
W.D. WILLIS  
Marine Biomedical Institute, University of Texas, Galvestone, Texas, U.S.A.
- 09.20 **Periventricular brain stem structures as sites of acute and chronic opiate action**  
A. HERZ  
Max-Planck-Institute für Psychiatrie, München, W. Germany.
- 09.40 **Modulation of pain by central nervous system stimulation**  
J.C. LIEBSKIND  
Department of Psychology, University of California, Los Angeles, California, U.S.A.
- 10.00 **Involvement of central transmitters in narcotic analgesia**  
G. PEPEU  
Department of Pharmacology, University of Florence, Florence, Italy.
- 10.30 **Intermission for coffee**

## ACUPUNCTURE

Chairman: B. Kaada  
(Oslo, Norway)  
Co-chairman: T.M. Murphy  
(Seattle, U.S.A.)

## COMMUNICATIONS

- 11.00 **Failure of acupuncture to produce localized changes in subjective cold pain ratings**  
B. LYNN and E.R. PERL  
University of North Carolina School of Medicine, Chapel Hill, North Carolina, U.S.A.
- 11.15 **Pain threshold effects of peripheral conditioning stimulation (electro-acupuncture)**  
S.A. ANDERSSON and E. HOLMGREN  
Department of Physiology, University of Göteborg, Sweden.
- 11.30 **Acupuncture anesthesia: a psychophysical study**  
L.M. KITAHATA, R.L. DAY, F.F. KAO, E.K. MOTOYAMA, J.D. HARDY  
Yale University School of Medicine, New Haven, Connecticut, U.S.A.
- 11.45 **Changes in thermal discriminability (d') and pain report criterion (L) following acupunctural or transcutaneous electrical stimulation**  
W.C. CLARCK, W. HALL and J. YANG  
N.Y. State Psychiatric Institute and Department of Psychiatry, College of Physicians and Surgeons, Columbia University, New York, New York, U.S.A.  
University of New South Wales Australia.  
Department of Anesthesiology, College of Physicians and Surgeons, Columbia University, New York, U.S.A.

Sunday, September 7, 1975  
09.00-14.00 (con't)

Room: A

## ACUPUNCTURE

Chairman: B. Kaada  
(Oslo, Norway)  
Co-chairman: T.M. Murphy  
(Seattle, U.S.A.)

- 12.00 **Signal detection evaluation of the effects of acupuncture on the perception of painful dental stimulation**  
C.R. CHAPMAN, M.E. WILSON and J.D. GEHRIG  
Departments of Anesthesiology, Psychiatry & Behavioral Sciences, Psychology, Oral and Maxillofacial Surgery - University of Washington - Seattle, Washington, U.S.A.
- 12.15 **The differential effects of morphine on centrally versus peripherally evoked nociception in the spinoreticular and trigeminal systems of rats**  
J.P. ROSENFELD, J.L. VICKERY and R.A. KOWATCH  
Department of Psychology, Cresap Neuroscience Laboratory, Evanston, Illinois, U.S.A.
- 12.30 **Effect of electro-acupuncture on the pain threshold**  
S.I. HELLER and Y. OMURA  
Heart disease Research Foundation of Brooklyn, New York; Department of Electrical Engineering, Manhattan College, & N.Y. Society of Acupuncture for Physicians & Dentists, New York, New York, U.S.A.
- 12.45 **Acupuncture analgesia and pain threshold**  
M. HYODO and K. MASAYAMA  
Department of Anesthesiology, Osaka Medical College, Takatsuki City, Osaka, Japan.
- 13.00 **The modulation of EEG and unit discharges of deep structures of brain during acupunctural stimulation and hypnosis of rabbits**  
C. TAKEHIGE, C.P. LUO and Y. KAMADA  
Department of Physiology, School of Medicine, Showa University, Tokyo, Japan.
- 13.15 **Prolonged modulation of transmission through subnucleus caudalis of V by acupunctural stimulation**  
F.W.L. KERR, D.E. NIJENSOHN and R.F.T. SHEPHERD  
Mayo Foundation, Rochester, Minnesota, U.S.A.
- 13.30 **The effect of acupuncture on the somatosensory evoked potential in animal and in man**  
H. YAMAMURA, Y. WAKUSHIMA, K. NISHITATENO and N. TACHIBANA  
Department of Anesthesiology, Tokyo University, School of Medicine, Tokyo, Japan.
- 13.45 **Autonomic effects of acupuncture on the cardiovascular system of dogs under halothane anesthesia**  
D.C. LEE, M.O. LEE, D.H. CLIFFORD and L.E. MORRIS



Sunday, September 7, 1975  
11.00-14.00

Room: C

### CENTRAL NERVOUS SYSTEM STIMULATION FOR THE CONTROL OF PAIN

Chairman: J.D. Loeser  
(Seattle, U.S.A.)  
Co-chairman: Y. Hosobuchi  
(S. Francisco, U.S.A.)

#### COMMUNICATIONS

- 11.00 Effects of dorsal column stimulation upon spontaneous thalamic unit activity in human**  
L. MODESTI and M. WASZAK  
Department of Neurosurgery, Veterans Administration Hospital and Upstate Medical Center, Syracuse, New York, U.S.A.
- 11.15 Percutaneous epidural stimulation (P.E.S.): a new modulation technique for the study of segmental efferent responses in humans.**  
P.L. LEROY, M.I. BOULOS, I.V. MONTELEONE, J.W. GOLOSKOV  
Wilmington, Delaware, U.S.A.
- 11.30 Modulation of experimentally produced pain in man by electrical stimulation of some cortical, thalamic and basal ganglia structures**  
J. GYBELS, J. VAN HEES, and F. PELUSO  
K.U.L. Leuven, Belgium.
- 11.45 Sensory threshold study during internal capsule stimulations**  
Y. HOSOBUCHI  
Department of Neurological Surgery, University of California, School of Medicine, San Francisco, California, U.S.A.
- 12.00 Pain patient selection for implantable stimulating devices**  
D. ERICKSON  
University of Minnesota Hospital, Minneapolis, Minnesota, U.S.A.
- 12.15 Management of intractable pain by epidural stimulation**  
M. MATSUKI, M. MARUYAMA, K. MASUKO, Y. ITO, T. IWANE, and R. TAKAHASHI  
Department of Anesthesiology, Niigata University School of Medicine, Niigata 951 Japan.
- 12.30 Stimulation analgésique chronique et arachnoïdite lombaire adhésive**  
J. SIEGFRIED, Y. LAZORTHES and J.C. VERDIE  
Clinique Universitaire de Neurochirurgie, Hôpital Cantonal de Zurich, Suisse.  
Clinique de Neurochirurgie, CHU de Rangueil, Toulouse, France.
- 12.45 Spinal cord stimulation in chronic pain syndromes: clinical and electrophysiological results**  
U. THODEN, J.U. KRAINICK and M. DOERR  
Neurological Clinic, Department of Neurophysiology, University Freiburg i. Br., W. Germany.
- 13.00 Electrotherapy (d-current) of spinal induced pain in patients with encephalomyelitis diss.**  
H.J. HUFSCHMIDT  
Neurochirurgische Universitätsklinik, Bonn - Venusberg, W. Germany.
- 13.15 Contribution of thalamic stimulations to the physiopathology of pain. A study based on 44 cases**  
G. MAZARS, L. MERIENNE and C. CIOLOCA  
Hôpital S.te Anne - Paris, France.
- 13.30 Effects of cerebellar stimulation on intralaminar thalamic evoked responses**  
S. JACQUES, E.J.A. CARREGAL and C.H. SHELDEN  
Huntington Institute Applied Med. Res., Pasadena, and U.S.C. Sch. Med., Los Angeles, California, U.S.A.
- 13.45 The prefrontal cortex and pain modulation in the rat**  
S.J. COOPER  
Department of Psychology, The Queen's University of Belfast, Belfast BT7 1NN, Ireland.

Sunday, September 7, 1975  
11.00-14.00

Room: C

### NON-NARCOTIC ANALGESIC AGENTS

Chairman: R. Ziel  
(Basle, Switzerland)  
Co-chairman: A. Bolletti  
(Florence, Italy)

#### COMMUNICATIONS

- 11.00 Analgesic drugs as pain producing substances**  
R. WORZ, H.U. GERBERSHAGEN and W. SCHOLL  
Nervenkrankenhaus Günzburg-Akademisches Krankenhaus für die Universität Ulm D-887 Günzburg, Reisenburger Str. 2.  
Schmerzambulanz der Universität Mainz, W. Germany
- 11.15 Use and misuse of drug therapy in chronic pain**  
D.M. LONG  
Department of Neurological Surgery - The Johns Hopkins University, School of Medicine, Baltimore, Maryland, U.S.A.
- 11.30 The use of psychopharmaceuticals in the treatment of chronic, severe, pain states**  
R. KOCHER  
Psychiatrick University Clinic, Basel, Switzerland.
- 11.45 Effects of anti-epileptic drugs on lightning pains in various nervous disorders**  
J. CAMBIER, H. DEHEN, J.C. WILLER  
Clinique Neurologique, Faculté Xavier-Bichat - 100 Bd du Général Leclerc - Clichy, France.  
Laboratoire de Neurophysiologie - Hôpital Saint-Antoine - Paris, France.
- 12.00 Management of post-herpetic neuralgia with anti-epileptic and tricyclic anti-depressant drugs**  
V.S. HATANGDI, R.A. BOAS and E.G. RICHARDS  
Department of Anaesthetics & Pain Clinic, Auckland Hospital, Auckland, New Zealand.
- 12.15 Modulation of neuronal activity in the spinal cord with ketamine and barbiturates**  
G. CORSSSEN, C. HOLCOMB, W. NIX and W. ERDMANN  
Department of Anesthesiology, The University of Alabama, School of Medicine, Birmingham, Alabama, U.S.A.
- 12.30 The significance of the membrane-stabilizing effect of non-narcotic analgesics**  
R. ZIEL and P. KRUPP  
Biological Research Laboratories of the Pharma Division of CIBA-GEIGY Limited, Basel, Switzerland.
- 12.45 Acupan (3, 4, 5, 6-tetrahydro-5 methyl-1-phenyl-1H-2,5 benzoxazocine), a new analgesic**  
O.N. RE  
Riker Laboratories, Inc. Northridge, California, U.S.A.
- 13.00 A controlled research on the analgesic activity of indoprofen in cancer patients**  
G. MARTINO and V. VENTAFRIDDA  
Pain Therapy and Rehabilitation Department - National Institute of Tumors, Milan, Italy.
- 13.15 Therapeutic effects of the polypeptide aprotinin on intermittent claudication and on pain at rest in patients with peripheral arterial occlusive disease**  
V. DIGIESI, V. BARTOLI and B. DORIGO  
Istituto di Patologia Speciale Medica e Metodologia Clinica, University of Florence, Florence, Italy.
- 13.30 Observation of analgesic activity and plasma concentration of hydrosoluble acetyl salicylic acid derivate**  
V. VENTAFRIDDA and G. MARTINO  
Pain Therapy and Rehabilitation Department, National Institute of Tumors, Milan, Italy.
- 13.45 Phantom limb pain: psychedelic treatment with lysergic acid diethylamide (LSD-25)**  
M. FANCIULLACCI, E. DEL BENE, G. FRANCHI and F. SICUTERI  
Department of Clinical Pharmacology, University of Florence, Florence, Italy.



Sunday, September 7, 1975  
11.00-14.00

Room: D

## MUSCULO SKELETAL PAIN

Chairman: B.E. Finneson  
(Crozer)  
Co-chairman: P. Arcangeli  
(Florence, Italy)

### COMMUNICATIONS

- 11.00 **Contributions of physical anthropology to understanding the aches and pains of ageing**  
W. HUNTER  
Department of Internal Medicine, Kaiser-Permanente Medical Center, San Francisco, California, U.S.A.
- 11.15 **On the electrogenic nature of palpable bands associated with myofascial trigger points**  
D.G. SIMONS  
16832 Morse Circle, Huntington Beach, California, U.S.A.
- 11.30 **Relief of referred somatic and visceral pain by extinction of myofascial trigger points**  
J. TRAVELL  
George Washington University, Washington, District of Columbia, U.S.A.
- 11.45 **The mechanisms of ischaemic pain in peripheral occlusive arterial disease.**  
P. ARCANGELI, V. DIGIESI, O. RONCHI, B. DORIGO and V. BARTOLI  
Istituti di Patologia Speciale Medica e Metodologia Clinica e di Clinica delle Malattie Nervose e Mentali della Università di Firenze, Firenze, Italia.
- 12.00 **Treatment of chronic low back pain and sciatica: comparison of caudal injections of bupivacaine and methylprednisolone, with bupivacaine followed by saline**  
H. BREIVIK, P.E. HESLA, I. MOLNAR, B. LIND  
University of Oslo, Akershus Central Hospital, Department of Anaesthesiology, Department of Neurology, N 1474 Nordbyhagen, Norway.
- 12.15 **Predictive factors in the treatment of low back pain by surgical intervention**  
E.M. WARING, G. WEISZ and S. BAILEY  
Victoria Hospital, London, Ontario, Canada.
- 12.30 **A follow-up study of nerve blocks for low back pain**  
F.N. ARNHOF, H. CARRON and B. POKORNY  
Nerve block and Pain Studies Clinic, Department of Anesthesiology, School of Medicine, Charlottesville, Virginia, U.S.A.
- 12.45 **The modulating effect of secondary gain on the low back pain syndrome**  
B.E. FINNESON  
Low Back Pain Clinic, Crozer - Chester Medical Center.
- 13.00 **Abdominal wall and pelvic pain**  
E. DE VALERA and H. RAFTERY  
Department of Obstetrics and Gynaecology, University College, Dublin, Ireland.  
St. Luke's Hospital, Cancer Association of Ireland.
- 13.15 **Modulation of joint pain**  
B. WYKE  
Neurological Research Unit, Royal College of Surgeons of England, Lincoln's Inn Fields, London, W.C. 2, U.K.
- 13.30 **Interdependence of low back pain and psychiatric symptomatology**  
A. SPRING, R. WITTEK and R. WÖRZ  
Nervenkrankenhaus Günzburg, W. Germany.
- 13.45 **Speculation concerning the possibility of a unitary peripheral cutaneous input system for pressure, hot, cold and tissue damage: Discussion of relationship to pain - (specificity theory as an evolving mechanism superimposed on pattern theory)**  
B.L. CRUE, B. KENTON and E.J.A. CARREGAL  
City of Hope National Medical Center Duarte, Duarte, California, U.S.A.

Sunday, September 7, 1975  
11.00-14.00

Room: E

## NARCOTIC ANALGESICS

Chairman: G. Pepeu  
(Florence, Italy)  
Co-chairman: O. Calvillo  
(Montreal, Canada)

### COMMUNICATIONS

- 11.00 **Investigations into the changes in ACh output from the cerebral cortex induced by morphine**  
A. NISTRI and G. PEPEU  
Department of Pharmacology, University of Florence, Florence, Italy.
- 11.15 **Metabolic studies of the interaction of meperidine and hydroxyzine in human subjects**  
J.E. STAMBAUGH and I.W. WAINER  
Department of Pharmacology, Thomas Jefferson University, Philadelphia, Pennsylvania, U.S.A.
- 11.30 **Clinical assessment of narcotic agonist-antagonist analgesics**  
R.W. HOUDE, S.L. WALLENSTEIN and A. ROGERS  
Sloan-Kettering Institute for Cancer Research, New York, New York, U.S.A.
- 11.45 **A comparison of the analgesic effects of morphine, hydroxyzine and their combination in patients with postoperative pain**  
W.T. BEAVER and G. FEISE  
Departments of Pharmacology and Anesthesiology, Georgetown University, Schools of Medicine and Dentistry, Washington, District of Columbia, U.S.A.
- 12.00 **A comparative analgesic study of nefopam hydrochloride and morphine sulfate in man**  
A. SUNSHINE and E. LASKA  
Arthur C. Logan Memorial Hospital and New York University Medical Center, New York, U.S.A.  
Rockland Research Center, Orangeburg, New York, U.S.A.
- 12.15 **The long-term use of diamorphine in advanced malignant disease**  
R.G. TWYGCROSS and S.J. WALD  
St. Christofer's Hospice, London, U.K.
- 12.30 **A comparison of piritramide & pethidine in the treatment of post-operative pain**  
I.T. DAVIE  
Western General Hospital, Edinburgh, EH4 2XU, Scotland, U.K.
- 12.45 **Respiratory effects of nefopam**  
J.C. GASSER and J.W. BELLVILLE  
Department of Anesthesiology, University of California, Los Angeles, California, U.S.A.
- 13.00 **Effects of altering brain serotonin activity on human chronic pain**  
R.A. STERNBACH, D.S. JANOWSKY and L.Y. HUEY  
Department of Psychiatry, School of Medicine, University of California, San Diego, California 92037, U.S.A. and Pain Unit, Veterans Administration Hospital, San Diego, California, U.S.A.
- 13.15 **Studies of tranquilizing agents (hydroxyzine and meprobamate) and meperidine in clinical pain**  
T.G. KANTOR and F.P. STEINBERG  
N.Y.U. Medical Center - 550 First Avenue, New York, New York, U.S.A.
- 13.30 **Possible physiological significance of enkephalin, the endogenous ligand of opiate receptors**  
J. HUGHES and H.W. KOSTERLITZ  
Unit for Research on Addictive Drugs, University of Aberdeen, Marischal College, Aberdeen AB9 1AS, Scotland, U.K.
- 13.45 **Morphine analgesia at CNS sites in the rat**  
Y.F. JACQUET and A. LAJTHA  
N.Y. State Research Institute for Neurochemistry and Drug Addiction, Ward's Island, New York City, New York, U.S.A.



Monday, September 8, 1975

09.00-12.30

Room: A

Chairman: R. Melzack  
(Montreal, Canada)

## LECTURES

### 09.00 Pain measurement

C.R. CHAPMAN

Department of Anaesthesiology, Psychiatry and Behavioral Sciences and Psychology, University of Washington, Seattle, Washington, U.S.A.

### 09.20 Psychological factors in pain

R.A. STERNBACH

Department of Psychiatry, School of Medicine, University of California, San Diego, La Jolla, California, U.S.A.

### 09.40 Psychiatric aspects of the control of pain

H. MERSKEY

The National Hospital for Nervous Diseases, London WC 1 N 3 BG, U.K.

### 10.00 On the mechanism of hypnotic pain control

M.T. ORNE

Institute of the Pennsylvania Hospital and the University of Pennsylvania, Philadelphia, U.S.A.

### 10.30 Intermission for coffee

## ACUPUNCTURE

Chairman: S.A. Andersson  
(Göteborg, Sweden)

Co-chairman: M. Hyodo  
(Osaka, Japan)

## COMMUNICATIONS

### 11.00 Neurophysiological and psychophysiological studies under acupuncture-analgesia and electroanesthesia

H. BENZER, J. GANGLBERGER, E. GROLL-KNAPP, M. HAIDER, G. PAUSER and H. SCHMID

Institute of Anesthesiology and Dept. Funct. Neurosurg. and Clin. Neurophysiol., University of Wien, Austria.

### 11.15 Clinical and experimental electrical acupuncture anesthesia

T. KUBA, H. SHIMIZU and S. TSUZI

Department of Anesthesiology, Kanto-Rosai Hospital, 2035 Kizuki Sumiyosi Cho, Kawasaki City, Kanagawa, Japan.

### 11.30 A comparison of the effectiveness of transcutaneous electrical stimulation and acupuncture treatment of chronic pain

E.J. FOX and R. MELZACK

Department of Anesthesiology, State University of New York, Downstate Medical Center, Brooklyn, N.Y. U.S.A. and Department of Psychology, McGill University, Montreal, Quebec, Canada.

### 11.45 L'analgesie par acupuncture. Un nouveau test d'objectivation de l'effet analgesique de l'acupuncture

CONSTANTIN, M. GEORGIAN and M. MARCUS

Bucarest, Roumanie.

### 12.00 Acupuncture anesthesia, waking suggestion and personality factors

T. TSUJIMOTO, S. HINO, H. MORI, Y. YAMAGUCHI and Z. KANEKO

Department of Psychiatry, Osaka University, Medical School and College for Biomedical Engineering and Nursing, Osaka University, Fukushima-ku, Osaka, Japan.

### 12.15 Psychological factors in the effectiveness of acupuncture treatment for chronic pain

C.M. HOSSENLOPP, L. LEIBER and B. MO

Departments of Psychiatry, Neurology and Anesthesiology, E.J. Meyer Memorial Hospital, Buffalo, New York, U.S.A.

### 12.30 Intermission for luncheon

Monday, September 8, 1975

14.00-15.30

17.30-19.00

Room: A

## ACUPUNCTURE

Chairman: D. Gross  
(Frankfurt/M, W. Germany)

Co-chairman: R.A. Boas  
(Auckland, New Zealand)

## COMMUNICATIONS

### 14.00 Effect on tension headache and brainstem reflexes. Physical properties of acupuncture points

O. LINDAHL, V. JOHANSSON, S. KOSIC, L. LINDWALL and L. TIBBLING  
Linköping, Sweden.

### 14.15 Clinical study on acupuncture therapy

J.O. SODIPO

College of Medicine, University of Lagos, P.M.B. 12003, Lagos, Nigeria.

### 14.30 Acute and chronic pain. A study of the comparative values of acupuncture therapy

E.A.M. FROST, C.Y. HSU and D. SADOWSKY

Department of Anesthesiology, Albert Einstein College of Medicine, Bronx, New York, U.S.A.  
Division of Dentistry, Bronx Municipal Hospital Center, Bronx, New York, U.S.A.

### 14.45 Acupuncture for acute post-operative pain relief

E.A.M. FROST, Y.I. KIM and L.R. ORKIN

Department of Anesthesiology, Albert Einstein College of Medicine, Bronx, New York, U.S.A.

### 15.00 Subjective and objective follow-up assessment of acupuncture therapy without suggestion in 100 chronic pain patients

T.M. MURPHY

Department of Anesthesiology, Anesthesia Research Center and Pain Clinic, University of Washington, School of Medicine, Seattle, Washington, U.S.A.

### 15.15 A critical evaluation of acupuncture in the treatment of chronic pain

E.R. KEPES, M. CHEN and M. SCHAPIRA

Albert Einstein College of Medicine, New York, U.S.A.

### 15.30 Intermission

### 17.30 Second General Assembly

### 18.30 Closing of the Congress



Monday, September 8, 1975

Room: B

11.00-12.30

### PSYCHOLOGICAL FACTORS IN PAIN

Chairman: H. Merskey  
(London, United Kingdom)  
Co-chairman: R. Melzack  
(Montreal, Canada)

#### COMMUNICATIONS

- 11.00 **The placebo effect in the relief of pain (a social theory)**  
H.L. LENNARD and L.J. EPSTEIN  
Department of Psychiatry, University of California, San Francisco, California, U.S.A.
- 11.15 **The SAD index for clinical assessment of pain**  
R.G. BLACK and C.R. CHAPMAN  
Departments of Anesthesiology, Psychiatry & Behavioral Sciences, and Psychology, University of Washington, Seattle, Washington, U.S.A.
- 11.30 **The subordinate role of psychological factors in modulating the intensity of post-operative pain**  
M. KEERI-SZANTO  
Department of Anaesthesia, University of Western Ontario, London, Canada.
- 11.45 **The use of guided affective imagery in the control and modulation of pain in selected chronic pain patients**  
R. HEINRICH and M. FULLER  
Department of Psychiatry, UCLA School of Medicine, Los Angeles, California, U.S.A.
- 12.00 **The intractable pain and suffering process-facilitating change**  
J.J. PINSKY  
Pain Center, City of Hope National Medical Center, 1500 East Duarte Road, Duarte, California, U.S.A.
- 12.15 **Psychosomatic pain and blood viscosity**  
L. DINTENFASS and I. ZADOR  
Haemorheology Unit, Sydney Hospital, and Department of Medicine, University of Sydney, Sydney 2006; and 6 Wellington Street, Woollahra, N.S.W., Australia.
- 12.30 Intermission for luncheon

Monday, September 8, 1975

Room: B

14.00-17.30

### PSYCHOLOGICAL FACTORS IN PAIN

Chairman: A. Taub  
(New Haven, U.S.A.)  
Co-chairman: C.R. Chapman  
(Seattle, U.S.A.)

#### COMMUNICATIONS

- 14.00 **Human chronic pain and personality: a canonical correlation analysis**  
G. TIMMERMANS and R.A. STERNBACH  
Pain Unit, Veterans Administration Hospital, San Diego, California, U.S.A.
- 14.15 **The relation of personality structure to variations in pain experience and complaint behaviour in patients with advanced cancer**  
M.R. BOND  
University Department of Psychological Medicine, Southern General Hospital, Glasgow, G51 4TF, Scotland, U.K.
- 14.30 **Correlation of personality profiles with pain syndrome**  
K. JAMISON, M.T. FERRER-BRECHNER, V.L. BRECHNER, and  
C.P. McCREARY  
UCLA School of Medicine, Los Angeles, California, U.S.A.
- 14.45 **Psychological predictors of success or failure of surgical intervention for intractable pain**  
A.E. BLUMETTI  
Upstate Medical Center, Syracuse, New York, U.S.A.
- 15.00 **Behavioural mechanisms of human pain: effects of expectancy, magnitude and type of crossmodal stimulation**  
B.B. WOLFF, P. COHEN and C.T. GREENE  
Pain Research Group, New York University Medical Center, New York, New York, U.S.A.
- 15.15 **Psychogenic pain: a critique**  
G.J. MATHEWS and CHOH-LUH LI  
National Institute of Neurological and Communicative Disorders and Stroke, National Institutes of Health, Bethesda, Maryland, U.S.A.
- 15.30 Intermission for coffee
- Chairman: R.A. Sternbach  
(La Jolla, U.S.A.)  
Co-chairman: B.B. Wolff  
(New York, U.S.A.)
- 16.00 **Nerve blocks and contingency management in chronic pain states**  
S.F. BRENA and I.P. UNIKEL  
Emory University Pain Clinic, Atlanta, Georgia, U.S.A.
- 16.15 **An information gathering device designed to reveal the magnitude of functional impairment and the possibility of secondary gain in chronic pain patients**  
A.J. OMINSKY  
Center for pain control, Hospital of the University of Pennsylvania, Pennsylvania, U.S.A.
- 16.30 **Emotional and psychological factors modifying the pain response of animals**  
D.D. KELLY and M. GLUSMAN  
New York State Psychiatric Institute, New York, New York, U.S.A.
- 16.45 **Multivariate analysis of pain data**  
G.B. COX and C.R. CHAPMAN  
Anesthesiology, Psychiatry & Behavioral Sciences, and Psychology, University of Washington, Seattle, U.S.A.
- 17.00 **Clinical and embryological indications of an autonomic role in pain**  
G.L. LOONEY  
U.S.C. School of Medicine, Los Angeles, California, U.S.A.
- 17.15 **Psychological treatment in some cases of chronic pain. Description and attempt to construct a model.**  
A. VIOLON  
Service de Neurochirurgie de l'Université Libre de Bruxelles, Unité de Neuropsychologie, Bruxelles, Belgium.



Monday, September 8, 1975  
11.00-12.30

Room: C

### TRIGEMINAL SYSTEM

Chairman: R. Dubner  
(Bethesda, U.S.A.)  
Co-chairman: E. Driscoll

#### COMMUNICATIONS

- 11.00 **The response of unmyelinated (C) nociceptive afferents to thermal and mechanical stimuli applied to the monkey's face**  
R.E. BEITEL  
Neurobiology and Anesthesiology Branch, NIDR, NIH, Bethesda, Maryland, U.S.A.
- 11.15 **Neural correlates of escape behavior in rhesus monkey to noxious heat applied to the face**  
R. DUBNER  
Neurobiology and Anesthesiology Branch, NIDR, NIH, Bethesda, Maryland, U.S.A.
- 11.30 **Axonal degeneration patterns in the cat brain stem spinal trigeminal nucleus following tooth pulp removal**  
L.E. WESTRUM, R.C. CANFIELD and R.G. BLACK  
Departments of Neurological Surgery, Biological Structure, Restorative Dentistry and Anesthesiology, University of Washington, Seattle, Washington, U.S.A.
- 11.45 **Principles of organization in the substantia gelatinosa layer of the spinal trigeminal nucleus**  
S. GOBEL  
Neurobiology and Anesthesiology Branch, NIDR, NIH, Bethesda, Maryland, U.S.A.
- 12.00 **Trigeminal subnucleus caudalis neurons excited by tooth pulp stimulation**  
T. YOKOTA  
Department of Physiology, Medical College of Shiga Japan.
- 12.15 **Trigeminal neuron subsets excited by the lingual nerve: response to tactile and noxious stimulation**  
M.A. BIEDENBACH  
Department of Physiology, University of Washington, Seattle, Washington, U.S.A.
- 12.30 Intermission for luncheon

Monday, September 8, 1975  
14.00-17.30

Room: C

### TRIGEMINAL SYSTEM

Chairman: T. Yokota  
(Shiga, Japan)  
Co-chairman: P.J. Jannetta  
(Pittsburg, U.S.A.)

#### COMMUNICATIONS

- 14.00 **Proprioceptive projections to the spinal nucleus of the 5th nerve in the cat**  
V.C. ABRAHAMS and F.J.R. RICHMOND  
Department of Physiology, Queen's University, Kingston, Ontario, Canada.
- 14.15 **Experimental modulation of unit activity in medullary dental pulp neurons by mechanical stimulation of non-dental oro-facial fields**  
R.F. YOUNG and S.G. NORD  
Departments of Neurosurgery and Neurology, Upstate Medical Center, Suny, Syracuse, New York, U.S.A.
- 14.30 **Role of trigeminal nucleus caudalis in the modulation of trigeminal sensory and motor neuronal activities**  
B.J. SESSLE and L.F. GREENWOOD  
Faculty of Dentistry, University of Toronto, Toronto M5G 1G6, Canada .
- 14.45 **Modulation of tooth pulp input into the spinal trigeminal nucleus by electrical stimulation of remote cutaneous areas in the cat**  
J.W. TAMARI and S.J. JABBUR  
School of Medicine, American University of Beirut, Beirut, Lebanon.
- 15.00 **Does trigeminal neuralgia arise from circus re-excitation between gasserian ganglion and a demyelinated region of sensory root?**  
W.H. CALVIN, J.D. LOESER and J.F. HOWE  
Department of Neurological Surgery, University of Washington, Seattle, Washington, U.S.A.
- 15.15 **Functional changes at neuralgia of the trigeminus**  
O.D. NEMSADZE and Z.V. GVENETADZE  
Tbilisi State Advanced Training Institute for Doctors, Ministry of Public Health of the URSS, Tbilisi, URSS.
- 15.30 Intermission for coffee
- Chairman: C.A. Pagni  
(Milan, Italy)  
Co-chairman: W.H. Calvin  
(Seattle, U.S.A.)
- 15.45 **Modulation of the slowly adapting system of the second pain by the fastly conducted (first) pain system**  
R. HASSLER  
Department of Neurobiology, Max-Planck-Institut für Hirnforschung, 6 Frankfurt/M, West Germany.
- 16.00 **Sensory loss and prolonged relief of pain in tic douloureux, after selective alcoholic trigeminal root injection**  
A. ECKER  
Syracuse, New York, 13210, U.S.A.



### TRIGEMINAL SYSTEM

Chairman: C.A. Pagni  
(Milan, Italy)  
Co-chairman: W.H. Calvin  
(Seattle, U.S.A.)

- 16.15 **Paroxysmal trigeminal neuralgia treated by injection not producing sensory loss: results of 200 cases**  
C.A. GLEADHILL  
Department of Neurological Surgery, Royal Victoria Hospital, Belfast, 12, Ireland.
- 16.30 **Treatment of tic douloureux, especially by the « Suprazomatic route (Sato) » for blocking the maxillary nerve**  
T. SATO and A. FUJII  
Department of Anesthesiology, Tottori University, School of Medicine, Yonago, Tottori, Japan.
- 16.45 **Microneurosurgical treatment of trigeminal neuralgia by selective juxtapontine rhizotomy of the « portio major » sparing the « intermediate fibers ».**  
C.A. PAGNI and P.E. MASPEL  
Neurosurgical Clinic, University of Milan, Milan, Italy.
- 17.00 **Microsurgical relief of neurovascular trigeminal nerve compression in tic douloureux**  
P.J. JANNETTA  
Department of Neurological Surgery, University of Pittsburg, School of Medicine, Pittsburg, Pennsylvania, 15261, U.S.A.
- 17.15 **Results of operative treatment of trigeminal neuralgia with different surgical techniques**  
H. PENZHOLZ and J. MENZEL  
Neurosurgical Department of the University of Heidelberg, Heidelberg, W. Germany.

### NARCOTIC ANALGESICS

Chairman: J.M. Besson  
(Paris, France)  
Co-chairman: H. Yamamura  
(Tokyo, Japan)

### COMMUNICATIONS

- 11.00 **Lamina V interneurons activity and analgesia: a study on agonistic and antagonistic properties of viminal stereoisomers**  
G. BENELLI, J.M. BESSON and D. DELLA BELLA  
Laboratoire de Physiologie des Centres Nerveux de L'Université de Paris VI, 4, Av. Gordon-Bennet, 75016 Paris, France, and Research Laboratoires Zambon S.p.A., Bresso (Milan) Italy.
- 11.15 **Possible involvement of noradrenaline and 5-hydroxytryptamine in the antinociceptive activity of narcotic analgesics**  
R.D.E. SEWELL and P.S.J. SPENCER  
Welsh School of Pharmacy, UWIST, Cardiff, U.K.
- 11.30 **Effects of morphine on responses of dorsal horn lamina V type cells elicited by sural nerve stimulation: differential action on A and C fibers inputs**  
D. LE BARS, G. GUILBAUD, I. JURNA and J.M. BESSON  
Laboratoire de Physiologie des Centres Nerveux, Université Pierre et Marie Curie, 4, Av. Gordon-Bennett, 75016 Paris, France.
- 11.45 **Morphine antagonists and depression of activity in cat ventrolateral tract axons produced by morphine**  
I. JURNA and W. GROSSMANN  
Pharmakologisches Institut der Universität des Saarlandes, D-665 Homburg/Saar, W. Germany.
- 12.00 **Microiontophoresis of morphine and meperidine in the brain stem of the cat**  
J.L. HENRY  
Department Anaesthesia Res., McGill University, Montreal, Canada.
- 12.15 **The interaction of the medial thalamus and the periaqueductal grey in the modulation of the antinociceptive actions of morphine**  
T.L. YAKSH, J.C. YEUNG and T.A. RUDY  
Sch. Pharm., Univ. Wis., Madison, Wisconsin, U.S.A.
- 12.30 Intermission for luncheon



Monday, September 8, 1975  
14.00-17.00

Room: E

### NARCOTIC ANALGESICS

Chairwoman: M. Vogt  
(Babraham, Cambridge, U.K.)  
Co-chairman: R.W. Houde  
(New York, U.S.A.)

### COMMUNICATIONS

- 14.00 **Effects of morphine and other narcotics in the spinal cord of the cat**  
O. CALVILLO, J.L. HENRY and R.S. NEUMAN  
Department of Research in Anaesthesia, McGill University, Montreal, Canada.
- 14.15 **Operant conditioning neural activity in rat nucleus intercollicularis: effect on behavioral measures of nociception**  
J.P. ROSENFELD, R.A. KOWATCH, P. BIRKEL and B. HETZLER  
Department of Psychology, Cresap Neuroscience Laboratory, Evanston, Illinois, U.S.A.
- 14.30 **Comparison of analgesic brain stimulation peripheral nerve and dorsal column stimulation to morphine sulfate: effects on evoked responses to noxious input**  
E.D. RICHARDSON and H. AKIL  
Louisiana State University, School of Medicine, New Orleans, Louisiana, U.S.A.  
Stanford University, School of Medicine, Palo Alto, California, U.S.A.
- 14.45 **Modification of midbrain and thalamic evoked responses by analgesic brain stimulation in the rat**  
T.D. OLESON and J.C. LIEBESKIND  
Department of Psychology, UCLA, California, U.S.A.
- 15.00 **Selective and prolonged analgesia in monkey resulting from brain stimulation**  
S.J. GOODMAN and V. HOLCOMBE  
Harbor General Hospital, UCLA, Torrance, California, U.S.A.
- 15.15 Intermission for coffee

Chairman: A. Herz  
(München, W. Germany)  
Co-chairman: H. Akil  
(Palo Alto, U.S.A.)

- 16.00 **Analgesia produced by mesencephalic stimulation: effect on bulbo-reticular neurons**  
T.J. MORROW and K.L. CASEY  
Department of Physiology, University of Michigan, Ann Arbor, Michigan, U.S.A.
- 16.15 **Analgesia induced by raphe nuclei stimulation in the cat**  
J.L. OLIVERAS, F. REDJEMI, G. GUILBAUD and J.M. BESSON  
Laboratoire de Physiologie des Centres Nerveux, Université Pierre et Marie Curie, 4, Av. Gordon-Bennett, 75016 Paris, France.
- 16.30 **Neurochemical basis for narcotic analgesia**  
M. VOGT  
Institute of Animal Physiology, Babraham, Cambridge, U.K.
- 16.45 **Effects of spinal cord lesions on the analgesic properties of electrical brain stimulation**  
A.I. BASBAUM, N. MARLEY and J. O'KEEFE  
Department of Anatomy, University College London and Department of Neurology and Physiology, University of California, San Francisco, California, U.S.A.

Tuesday, September 9, 1975  
08.30-10.30

Room: B

### TAXONOMY ON PAIN

Chairwoman: D. Albe-Fessard  
(Paris, France)

### WORKSHOP

Tuesday, September 9, 1975  
08.30-10.30

Room: C

### WORKSHOP

### PAIN CLINICS

Chairman: H. Gerbershagen  
(Mainz, W. Germany)

With the following preordinate contributions:

#### Ucla outpatient pain clinic

V.L. BRECHNER, M.T. FERRER-BRECHNER, G.D. ALLEN and R.L. KATZ  
Department of Anesthesiology UCLA School of Medicine, 10833 Le Conte Avenue, Los Angeles, California, U.S.A.

#### The development of a multidisciplinary, broad spectrum, multimodality pain center to serve the needs of veterans from a large medical catchment area

G.V. MASCIA  
Psychology Service, Hospital Brooklyn, New York, U.S.A.

#### The Pain Control Unit (PCU) nurse-her training and function

R.M. LAWRENCE  
North Hollywood, California, U.S.A.



Tuesday, September 9, 1975  
08.30-10.30

Room: D

## WORKSHOP

### DATA BANKS

Chairman: R.G. Black  
(Seattle, U.S.A.)

With the following preordinate contributions:

**Ten years' experience with a computerized pain data retrieval system**  
R.J. EVANS  
Toronto General Hospital, Toronto, Canada.

**Pain data center - Epidemiology and statistics**  
T.C. CHEN  
National Institute of Neurological and Communicative Disorders and Stroke, NIH,  
Bethesda, Maryland, U.S.A.

**A comprehensive biographical questionnaire for assessing the relationship between pain and psychological factors**  
A. ANNIS  
Pain Control Unit, University Heights Hospital, Bel Air, California, U.S.A.

**Data and experiences from operation of a pain control unit at the University Heights Hospitals, Bel Air, California, dealing with an assessment of the first one hundred patients treated in the unit**  
R.M. LAWRENCE  
Department of Psychology, UCLA, Los Angeles, California, U.S.A.

Tuesday, September 9, 1975  
08.30-12.30  
14.00-18.00

Room: E

## SYMPOSIUM ON CANCER PAIN

Tuesday, September 9, 1975  
08.30-10.30

Room: F

## WORKSHOP

### ROLE OF I.A.S.P.

Chairman: J.J. Bonica  
(Seattle, U.S.A.)

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