

THERMOGRAPHY IN THE WORLD

This survey reports all information reaching the Editor about meetings with main or partial subject on thermographic applications. It is also available to all thermographic Societies for printing meetings' abstracts.

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■ **WASHINGTON (U.S.A.).** On June 26th and 27th 1975, a meeting of Thermographers was held in Washington to clarify some of the technical problems and particularly interpretative criteria of breast thermography. The meeting was sponsored by Dr. William Pomerance of NCI. « *Thermographic Quarterly* », a new publication of the American Thermographic Society, reports the conclusions of the meeting about more objective criteria for interpretation of breast thermograms.

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■ **U.S.A.** Dr. Harold J. Isard was elected President of the American Thermographic Society in Atlanta, Georgia, on September 28th, 1975.

The present composition of ATS officers and executives is: H. J. Isard, M.D., President; G. D. Dodd Jr., M. D., Vice-President and President-Elect; A. Zermenio, Ph. D., Secretary and Treasurer; M. S. Lapayowker, M. D., Chairman of Executive Council; T. J. Love Jr., Ph. D., Budget Committee Chairman; H. I. Libshitz, M. D., Program Committee Chairman; M. Abernathy, M. D., Membership Committee Chairman.

Member-at-large: I. Barash, M.D.; M. Madsen, M.D.

Staff: Mrs. N.M. Oldfield, Executive Director.

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■ **CESENA (Italy).** The 2nd Course in Thermography was held from 1st to 4th of March 1976 at the Tumours Centre of Cesena Hospital.

The Course was organized by L. Rocchi, Head of the Tumours Centre. The programme was the following:

Introducing lecture: Thermography in vibrating tools (G. F. Pistolesi); *The physics of infra-red radiation* (G. Galletti); *The thermoregulation mechanisms* (L. Rocchi); *Thermography of benign lesions* (A. Parrella); *Thermography of malignant lesions* (L. Rocchi); *Comparison between thermography and mammography* (G. Viganotti); *Comparison between thermography and scintigraphy in the breast cancer screening* (P. Riva); *The problem of cold tumour* (L. Rocchi); *The problem of TH 3* (L. Rocchi); *Thermographic follow-up of breast cancer after radiotherapy* (C. Altschuler); *Thermography on bone metastasis* (N. Cellini); *The mammary linfomas* (G. Viganotti); *Comparison between cytology and mammary thermography* (A. Parrella); *Workshops* (A. Parrella).

ROUND TABLE: *Health screening by thermography* (G. Landi - G. Viganotti - P. Riva - L. Rocchi - L. Lovisatti):

Scintigraphy of thyroid gland (P. Riva); *Thermography of thyroid gland* (L. Rocchi); *Thermography of bone tumours* (C. Altschuler); *Thermography of bone's fractures* (M. Boschetti); *Thermography of joint lesions* (L. Rocchi); *Dynamic thermography in plastic surgery* (A. Grisotti); *Workshops* (L. Rocchi); *The follow-up by thermography of thrombo-phlebitis* (G. Landi); *Scintigraphic and thermographic patterns of carotid insufficiency* (P. Riva - L. Rocchi); *Thermography in peripheral vascular diseases* (T. Marcatelli); *Thermography in head tumours* (L. Rocchi); Final lecture: Theoretical investigation and practice in thermography (A. Romanini).

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■ **BATH (England).** 9th - 10th April, 1976 a meeting of European Thermographic Association was held in Bath, organized by E. F. J. Ring from Royal National Hospital for Rheumatic Diseases.

The programme was as follows:

1) Teaching Commission. Under the chairmanship of Dr. Hessler (Lausanne) the commission is hoping shortly to have a detailed publication on thermography techniques and their clinical applications for teaching purposes. It was noted with deep regret that Professor R. Oliver of London, who was active on this commission recently died. A letter of condolence to his widow has been sent in the name of the members of the Association.

2) Terminology Commission. A defined vocabulary of terms is still in preparation which will, it is hoped, ultimately result in clearer understanding of the words used in the different European languages. A real effort is being made to only adopt those terms which are scientifically accurate and have no equivocal meanings on translation from one language to another. It is hoped that at the next meeting in November, assistants from the National Standards Organizations of the countries involved will be arranged. In preparing this dictionary of thermology the commission is endeavouring to supplement the formal definitions with more detailed information to assist readers who are not physicists.

3) Biothermology Study Group. Two half day meetings were devoted to emissivity and its effects on infrared thermography. Under the chairmanship of Professor Gouault (Rouen) Mr. Delis&e described the physical laws of radiation with reference to infrared thermography. Mr. P. Herve (Paris) described the new equipment for accurate measurement of the emissivity of skin and its variation with angle and wave length. Dr. J. Clark (Nottingham), gave a practical account of the various factors effecting clinical thermography with particular reference to errors by the mathematical model of the heat flow within a breast with a tumour, together with computed results for its behaviour under skin cooling ect. A discussion followed in which Dr. J. Steketee (Rotterdam) gave same measured emissivity values for the skin including the effects of cosmetics.

4) Symposium on thermography in bone and joint diseases. This meeting was well attended. The papers given indicated the range of interest and the useful applications of thermography to this area of medicine. Some of the topics from this symposium are reproduced in *Acta Thermographica*.

5) European Thermographic Association Executive Committee meeting. It has been discussed about the preparations for the European Thermography Congress to be held in Barcelona in September 1978.

6) Social Programme. Included a concert given by the Herschel Ensemble including the music of William Herschel. Miss Caroline Herschel, the last relative of William Herschel to bear the family name, attended. The concert itself was held in the Octagon which was a formal chapel at which Herschel was the first organist and music director in 1766-1782.

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□ LOS ANGELES (U.S.A.). The American Thermographic Society sponsored the First Regional Tutorial, scheduled on 19th and 20th June, 1976 at Los Angeles Marriott.

Medical Thermography applications to be covered include: breast cancer detection; stroke; peripheral vascular diseases; obstetrics and gynaecology, etc.

Faculty: I. Freundlich; H. Karpman; R. Gold; T. Winsor and others.

The faculty was joined by ATS industrial members who, with the aid of a technologist, discussed the technique for taking thermograms (AGA Corporation; Spectrotherm Corporation; Eastman Kodak Company; Polaroid Corporation and others).

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□ TOKYO (Japan). The 8th annual meeting of Japanese Society of Biomedical Thermography and the International Symposium on Biomedical Thermography were held on 19th and 20th of June, 1976 at Kikaishinko Building, Shiba Park, Tokyo (President: K. Atsumi).

The programmes were as follows:

FIRST SCIENTIFIC SESSION: *The objective diagnosis of Raynaud's phenomenon* (M. Shingu et Al.); *The effect of local anaesthetics and vasoconstrictors on the temperature of the skin* (T. Suzuki et Al.); *Human thermal responses to a step change in ambient temperature* (M. Kawashima et Al.); *Thermoviewer type M.D.* (A. Masuki et Al.); *Development of new portable medical infrared thermometer with light indicators for measuring area* (A. Nagasawa et Al.); *A study of skin temperature control* (I. Fujimasa et Al.); *Detection of breast cancer with the use of deep body thermometer* (Z. Yamazaki et Al.); *Thermal patterns of the normal breast analysed by thermography and infrared phlebography* (J. Yagamata et Al.); *Thermographic study in relation to the detection and prognosis* (I. Uchida et Al.).

SECOND SCIENTIFIC SESSION: *Thermographic study on acupuncture anaesthesia* (K. Nishijo); *Thermographic study on oriental physiotherapy* (T. Matsumoto et Al.); *Quantitative thermal patterns in RA joints and the influence of antirheumatic agents on thermographic patterns* (M. Nagashima et Al.); *On the skin temperature of the face and the neck* (E. Takenuma et Al.); *Trial application of color thermogram in orthopedic diseases* (T. Kamano et Al.); *The thermographic studies on the lower legs in CVA patients with hemiplegia - 5th report*.

INVITED LECTURE 1 (Chairman: K. Atsumi): *The current status of thermography in United States* (M. S. Lapayowker).

INVITED LECTURE 2 (Chairman: K. Atsumi): *The current status of medical thermography in Europe* (N. J. M. Aarts).

SYMPONIUM: *The current status of biomedical thermography in Japan* (Chairman: K. Atsumi; Vice Chairman: Y. Sakurai; Special Commenter: N. J. M. Aarts; M. S. Lapayowker); *Biological application of thermography* (I. Fujimasa); *Physiological basis of thermography* (Y. Sakurai); *Deep body thermometer* (T. Togawa); *Cooperative diagnosis with thermography and other non-invasive methods*

(T. Nishisaka); *Health and thermography* (I. Nishijo); *The thermographic studies of the lower legs in C.V.A. patients with hemiplegia* (K. Yanagi); *Thermography in collagen diseases* (Y. Miki et Al.); *The present status of thermography at a radiological department in Japan* (T. Itoh); *Recent survey of thermographic studies in obstetric and gynaecologic practice and its associated fields* (H. Suda); *Applications of thermography to oral surgery* (A. Nagasawa); *Present status of thermography in cancer research* (Y. Ohashi); *Thermographic studies on peripheral vascular disease and intestinal circulation* (Z. Yamazaki); *Thermographic study in dermatology and plastic surgery in Japan. Its present- status and future* (A. Munakata); *A review of thermographical studies on vibration syndrome in Japan* (Y. Naus); *Thermography in orthopedic surgery* (R. Kanie).

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■ **U.S.A.** « *Hot Spot* » published periodically from 1969 by the American Thermographic Society has now been replaced by « *Thermographic Quarterly* », Editor: David A. Winsor, M.D.; Associate Editor: Norma M. Oldfield.

Address: American Thermographic Society - 972, Washington Street - Gloucester, Massachusetts 01930.

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. **STRASBOURG (France).** A new review, called « *Senologia* », entirely devoted to breast disease problems, is edited by Strasbourg Team: Editor in Chief, Ch. Gros; Editorial Board, C. Annonier, B. Gairard, M. Gautherie, D. Gros; Editor assistants, Y. Hummel and G. Vetter; Secretary, B. Lux.

Address: Faculté de Medecine - 11, Rue Humann - 67085 Strasbourg.

An article of thermographic interest is published on the first number: M. Gautherie et al. (Strasbourg). *Thermographic aspects of mammary cyst.*

The second number of « *Senologia* » was issued on occasion of the Symposium on Non-cancerous Breast Diseases (Strasbourg 30th June - 3rd July, 1976), and contains the reports and free papers abstracts.

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□ **STRASBOURG (France).** A Pre-Symposium organized by the College of Post-graduate Teaching in Radiology and devoted to the Post-graduate Teaching in Thermography, Ecography, Xero-radiography was held on June 28th, 1976, before the Symposium on Non-cancerous Breast Diseases (President: Ch. Gros; Secretary: M. Gautherie).

The following conferences about thermography were presented: **PHYSICAL AND PHYSIOLOGICAL BASIS METHODS:** Chairman; F. Halberg (Minneapolis); Co-Chairman: Y. Houdas (Lille); Secretary: Y. Quenneville (Strasbourg).

J. J. Vogt (Strasbourg): *Skin temperature and thermoregulation*; Y. Houdas (Lille): *Heat transfer within in vivo tissues*; F. Halberg (Minneapolis): *Thermal biorhythms*; Y. Quenneville (Strasbourg): *Infrared thermometry and thermography*; C. Huber (Paris): *Liquid crystal thermometry and thermography*; M. Gautherie (Strasbourg): *The thermographic information: origin, processing, use*; J. Bransier (Paris): *Definition and measurement of biothermal parameters (other than skin temperature)*.

CLINICAL APPLICATIONS: Chairman: C. Hessler (Lausanne); Co-Chairman: E. F. J. Ring (Bath); Secretary: Y. Quenneville (Strasbourg).

R. Amalric (Marseille): *Skin diseases*; E. F. J. Ring (Bath): *Bones and joints diseases*; A. Le Treut (Bordeaux): *Peripheral vascular diseases*; J. Robert (Nancy): *Head and neck diseases*; L. Mallner (Lidingo): *Medical thermography* (film).

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■ **STRASBOURG (France).** The 5th Seminar of French Club of Clinical Thermography was held on June 29th, 1976, in connection with the Symposium on Non-cancerous Breast Diseases. At present, the Club has the following Board: R. Amalric (President); J. M. Spitalier (General Secretary); Th. Planiol, P. Marques, C. Lagarde (Vice-Presidents).

Address: Club Français de Téléthermographie Clinique - B. P. N°. 1 - 13381 Marseille Cedex 4 (France).

T.A. Thierrière (Paris) chaired the 5th Seminar, which was divided in two sessions.

In the first session (Chairman; F. Solsona, Zaragoza), the following proffered papers were presented: J. Dumoulin (Charleroi): *Thermography of the arterial diseases of lower limbs, before and after epidural infiltration*; M. Prats Esteve et al. (Barcelona): *Thermography in the control of sympathetic blockade of upper limb*; D. Giraud et al. (Marseille): *Thermographic evaluation of the action of cerebral vaso-dilator drugs*; R. Monteyne et al. (Gand): *Thermography in the varicocele*; C. Hessler et al. (Lausanne): *Thermography in Paget's disease treatment by human calcitonin*; G. F. Dacquino et al. (Milano): *Thermography in scoliosis*; D. Selig et al. (Strasbourg): *Quantitative thermographic study of vasomotor texts in dermatosis*.

In the second session (Chairman: M. Prats Esteve, Barcelona), the following proffered papers were presented: Y. Houdas et al. (Lille): *Comparison between infrared and liquid-crystal thermography*; A. Bellossi et al. (Rennes): *Echotomography and thermography in thyroid tumours*; L. Acciari et al. (Verona): *Thermography of the salivary glands*; Y. Quenneville et al. (Strasbourg): *Thermography of the oral cavity and teeth*; M. Jaziri et al. (Tunis): *Clinical, radiological and thermographic patterns of 150 malignant breast tumours*; D.V. Fournier (Heidelberg): *Thermographic evaluations of growth rates in 53 primary breast carcinomas*; L. Puigdomenech Arisa et al. (Barcelona): *Thermographic results in 80 probable melanomas*.

Finally, two reports were presented: R. Amalric et al. (Marseille): *Validity of mammary thermography*; J.M. Spitalier et al. (Marseille): *Infrared rays against cancer*.

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■ **STRASBOURG (France).** Many reports of thermographic interest were presented at the 4th International Symposium on Senology, devoted to Non-cancerous Breast Diseases which was held in Strasbourg (30th June - 3rd July, 1976): President: Ch. Gros; General Secretary: M. Gautherie.

1) **ROUND TABLE A**, devoted to « Investigation methods »:

Reports: M. Gautherie et al. (Strasbourg): *Breast thermography. Basic and pathological patterns: examination policy*.

Free papers: B. Szigeti et al. (Montargis): *Infrared photographic study in non-cancerous breast diseases*; Y. Quenneville et al. (Strasbourg): *Breast impedance*; J. Tricoire et al. (Bobigny): *Flat plate thermography and diagnosis in breast diseases*; L. Marie1 et al. (Bobigny): *Mastopathies: mastosic vascularization*; J. Y.

Pons et al. (Créteil): *Study of breast thermography variations with reference with clinical and biological parameter, in breast dystrophies*; B. Talia et al. (Modena): *Variations of the thermographic pattern of the breast during the menstrual cycle*; F. Rouanet-Rousseaux et al. (Marseille): *Estro-progestin hormones and breast thermography*; G. A. Bothmann (Heidelberg): *Correlations between clinical, mammographic and thermographic patterns. Prospective studies*.

2) **ROUND TABLE C**, devoted to « Mastopathies »:

Reports: R. Amalric (Marseille): *Fibro-cystic disease: radiography-thermography*; P. Bourjat et al. (Strasbourg): *Gynecomastia: radiography and thermography*.

Free papers: D. Giraud et al. (Marseille): *Breast cysts and thermography*; L. Thomassin et al. (Marseille): *Adeno-fibromas and thermography*; P. Galley et al. (Bobigny): *Inflammatory diseases of the breast*; L. Rocchi (Cesena): *Depistage of breast benign lesions by thermography*.

3) **ROUND TABLE D**, devoted to « Risks of cancer »:

Free papers: D. U. Fournier et al. (Heidelberg): *The clinical, radiological and thermographic risk group of 14,000 patients with 582 breast cancers*; G. Otto (Berlin): *The prognostic value of the long-term follow-up by thermography in the positive or doubtful mammograms*.

4) **ROUND TABLE E₁**, devoted to « Treatments »:

Free papers: C. Altschuler et al. (Marseille): *Mammary prosthesis and thermography*.

5) **ROUND TABLE E₂**, devoted to « Hormonal treatments »:

Free papers: E. Lattanzio (Bari): *Clinical, radiological and thermographic study of the breast, during hormonal treatment*.

Abstracts of the papers presented at the Symposium on Non-cancerous **Breast** Diseases are available in the 2nd number of « *Senologia* », **a new review, which we** give some information about, in these news.

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■ **WASHINGTON (U.S.A.)**. The 7th annual meeting of American Thermographic Society will be held in Washington (D.C.) at the Hilton Hotel, on September **17th** and 18th, 1976.

Tentative programme of the first day is divided in two scientific sessions. The first session is devoted to *thermographic applications other than breast diseases*. Following arguments will be treated:

- *Thermography in pediatric orthopedic surgery. Possible areas of application* - *Application of color thermography to pediatric rehabilitation* - *The patho-anatomic basis for the abnormal thermogram in carotid disease* - *Dynamic thermography* - *The use of thermography in evaluating the efficacy of treatment programs in peripheral vascular diseases* - *Thermography in the assessment of bowel viability at surgery: preliminary report* - *Thermography: objective measurement*.

The second session is devoted to *breast thermography*, with the following reports:

- *Present status of breast thermography* - *Lack of efficiency of thermography as a screening tool for minimal and stage 1 breast cancer* - *Improved thermographic results in a mass screening project*;

- *Thermography: highest risk marker in breast cancer* - *A new color enhancement technique for the study of cancer of the breast* - *Quantitative breast thermography. A study of relationships between Amalric's classes and clinical parameters* - *Automated interpretation of breast thermograms* - *Preliminary date from ratio temperature measurements*.

Among those presenting papers will be: G. D. Dodd; M. Moskowitz; R. E. Nerlinger; W.B. Hobbins; J. Nyirjesy; E. J. Klink, Jr.; H. Roehrig; M.A. Rosman; R. Blank; R. H. Ackerman; M. L. Karpman; H. Y. Kresel; M. S. Lapayowker and T. W. Winsor.

On the second day, there will be two sessions in the morning and two in the afternoon with a tutorial programme, each led by an instructor and each to cover a medical application of thermography.

For further information and for registration, mail to: H. I. Libshitz, M.D., Department of Diagnostic Radiology, M.D. Anderson Hospital, 6723 Bertner Avenue, Houston, Texas, 77030 (U.S.A.).

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■ **PARIS (France).** A Round Table devoted to the clinical use of Thermography, will be held on the 2nd of October 1976 during the post-graduate course for practitioners « Entretiens de Bichat » at the Faculty of Medicine « Pitié-Salpêtrière » 105, Boulevard de l'Hôpital, 75013, Paris.

President: R. A. Thierrière, Radiological Department, Necker's Hospital, 149 Sevres Str., 75730 Paris.

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■ **MONTREAL (Canada).** On the occasion of the foundation meeting of the « Canadian Thermographic Club », the first Canadian Symposium on thermography will be held at Mont Gabriel (Quebec) on the 16th and 17th of October, 1976.

The programme will be as follows:

A first scientific session devoted to breast thermography. A second scientific session devoted to non-breast thermography. There also will be a business meeting for the organization of the « Canadian Thermographic Club ».

President of the organizing committee: Dr. Roger Ghys, B. Sc., M.D., F. R. C. P. (C.), 10690 Avenue d'Auteil, Montreal (Canada).

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■ **STRASBOURG (France).** Dr. M. Gautherie, General Secretary of the European Thermographic Association announced the next issue of the first bilingual (English and French) digest intended for medical students, of the whole of Europe, with the following title: « Introduction to Medical Thermography ».

This digest is edited by the Commission on Teaching of A.E.T.

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■ **MARSEILLE (France).** The 6th « Days of Dynamic Telethermography » will be held at J. Pauli, 1. Calmettes Institute, 232 Boulevard de Sainte Marguerite, 13009 Marseille, on the 15th and 16th of October 1976.

The programme will be as follows:

On the first day: *Bases of dynamic telethermography* (R. Amalric); *Technique of examination* (L. Thomassin).

BREAST TELETHERMOGRAPHY PART 1: *Normal vascular patterns* (D. Giraud); *Classification of thermograms* (R. Amalric); *Cold cancers and fast-developing cancers* (J. M. Spitalier); *Diagnosis of extension* (B. Agopian).

BREAST TELETHERMOGRAPHY PART 2: *Detection of sub-clinical forms* (J.M. Spitalier); *Surveillance of treated breast cancers; post-surgical* (D. Giraud); *post-*

radiation (R. Amalric); *post-hormone therapy* (C. Altschuler); *Benign breast tumors* (F. Mouton); *Mastoses* (F. Rousseaux); *Interpretation of breast thermograms* (D. Giraud).

CONCLUSIONS: Senology (J. M. Spitalier).'

On the second day the programme will be:

EXTRA-MAMMARY CANCERS: *Malignant skin melanomas* (J. M. Spitalier); *Bone and soft tissue sarcomas* (C. Altschuler); *Eye tumours* (R. Amalric); *Uterine cervix* (Y. Ayme); *Bone metastases* (L. Thomassin); *Other metastases and body thermovision* (J. Levrand); *Target volume determination* (F. Rousseaux); *Conclusion: D.T.T. indications in carcinology* (R. Amalric).

TELETHERMOGRAPHY IN NON-MALIGNANT DISEASES: *Traumatology* (C. Altschuler); *Peripheral vascular diseases* (D. Giraud); *Cerebral vascular diseases* (C. Altschuler); *Angyomes* (R. Amalric); *Bone and joint pathology* (L. Thomassin); *Plastic surgery* (F. Meline); *Conclusion: D.T.T. in non-malignant diseases* (R. Amalric).

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□ **MADISON (U.S.A.).** The 2nd Annual Mid-American Breast Cancer Symposium will be held on 5th and 6th November, 1976 in Madison (Wis.), U.S.A.

This Symposium is convened in honour of Robert Egan, pioneer mammographer.

In the programme, some Sessions, devoted to thermography, are foreseen: N. J. M. Aarts (Tilburg): *A look at european breast cancer screening*; H. Isard (Philadelphia): *Thermographic patterns markers*; R. Byrne (Milwaukee): *Is thermography worth it?*; J. Nyirjesy (Bethesda): *A private thermography program in the screening*.

Workshops in thermography will be managed by R. Lawson (Montreal), R. Byrne (Milwaukee), N. J. M. Aarts (Tilburg) and H. Isard (Philadelphia).

Information secretary: Wisconsin Breast Cancer Detection Foundation, Inc. 7803 Mineral Point Road - Madison, Wis. 53717 U.S.A.

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. **PARIS (France).** The General Assembly of the European Association of Thermography, the 5th meeting of the Commission of Teaching and Nomenclature of the same association, the 3rd meeting on Industrial Thermography, the 3rd meeting of the Working Group on Biothermometry will be held on 15th November, 1976, at Palais des Congres, Port Maillot, Paris.

General Secretary of A.E.T.: M. Gautherie, Faculty of Medicine, 11, rue Humann, 67085 Strasbourg (France).

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■ **MARSEILLE (France).** The 6th meeting of the French Club of Clinical Telethermography will be an International Seminar and will be held in Marseille, from 23rd to 26th of May 1977. Chairman: J. M. Spitalier.

Official languages: French, English.

TOPICS: Thermographic prognosis of cancer - Thermographic' study of thyroid - Peripheral and cerebral vascular pathology - Osteo-articular pathology - Sub-clinical breast cancers - Dynamic telethermography in the world.

Information secretary: Club Français de telethermography - B. P.N° 179 - F 13275

MARSEILLE CEDEX 2.